

Flow

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DETROIT

You Can't Afford to Miss:
44 Questions and Answers
on Steel Strapping Methods



SIXTY "WAR READY" PAINT ISSUE



Free your hands with a ZIP!



P&H
ZIP-LIFT
HARNISCHFEGER CORP. MILWAUKEE, WIS.

SEE YOUR ZIP-LIFT DEALER, or
write us for Bulletin H-20 — It's
filled with time-saving ideas for you.



HANDLE IT "THRU-THE-AIR"—FASTER—FOR LESS

Skilled hands shouldn't be load-lifters. There's more important work for them to do — more profitably!

Take the hands out of handling — make your man-hours more productive by using Zip-Lifts wherever loads must be handled frequently — along assembly lines, beside machine tools, etc. Make it a push button job.

There's nothing like the Zip-Lift for all-round service and quality — America's favorite wire rope electric hoist.

You pay so little more for ADDED VALUES like these—

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LIFETIME CONSTRUCTION — Precision built — shaved gears run in oil — grease-sealed bearings — fully enclosed.

P & H

ELECTRIC HOISTS

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Milwaukee 14, Wisconsin

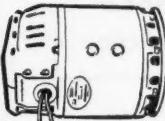
HARNISCHFEGER

CORPORATION





Overload Heat will NEVER DAMAGE an Automatic Motor even if it gets hot enough to Roast a Turkey!



Automatic has pioneered MORE FIRSTS in the material handling electric truck industry than any other manufacturer.

Typical, is the Automatic SILICONE INSULATED MOTOR, that *won't burn out* . . . even if it gets hot enough to roast a turkey. This magic insulation covers approximately 300 feet of possible trouble . . . the copper conductors used in the armature and field coils of the Automatic motor.

It has terrific resistance to heat . . . is your protection against a burned out motor when your Automatic Electric Truck carries unexpected emergency overloads, has to climb

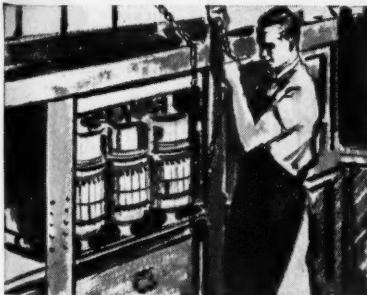
Exclusive Silicone Insulation Is The Answer

steep ramps or take abuse. Automatic motors will, if necessary, run continuously at a temperature of 350 degrees F. without damage!

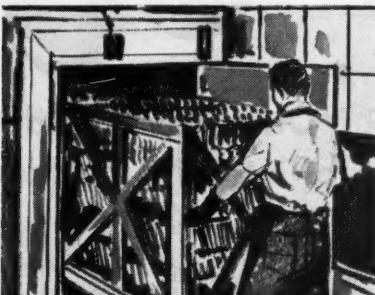
So remember, only AUTOMATIC gives you silicone insulation . . . with assured burn-out protection . . . no costly motor repairs, no money-wasting time out of service.

This is but one of the many *extras*, precision-engineered and built into every inch of Automatic Electric Trucks. No wonder all types of industry use them to cut handling costs and release workers from back-breaking hand handling! Mail coupon for Material Handling Booklet and Money-Saving Check Chart.

why AUTOMATIC motors WON'T BURN OUT!



Conductors take a silicone bath. Above you see the process of insulating approximately 300 feet of conductors used in Automatic motors. Copper conductors are impregnated with this silicone varnish . . . then baked to give them the heat resisting qualities that won't let Automatic armatures and field coils burn out.



Baked 6 times longer. Automatic's silicone treated conductors are baked a full 29 hours in this oven . . . 6 times longer than the time required to process other type insulation. This expensive process gives silicone the magic that makes it flexible, tear-free, crack-free and burn-out proof. No wonder, no trucks cost less to operate than Automatic.



Trouble-free service is yours with an Automatic Electric Truck because it *won't burn out*. This amazing truck will lift, move and stack your products ceiling high . . . cut your handling costs 50% to 75% . . . and every inch of an Automatic is precision-engineered to make any handling operation faster, easier and safer.



AUTOMATIC PUTS MORE INTO ITS ELECTRIC TRUCKS
SO YOU GET MORE OUT OF THEM

**MAIL COUPON
for Material
Handling
Booklet and
Check Chart**

AUTOMATIC TRANSPORTATION CO. DIV. OF THE YALE & TOWNE MFG. CO.

Please send me, without obligation, FREE Money-Saver Check Chart . . . FREE booklet "How To Make Your Material Handling Pay Dividends" . . . also more information on money-saving silicone insulated motor.

Company Name _____

By _____

Street Address _____

City _____ **Zone** _____ **State** _____

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Chicago 20, Illinois

EXCLUSIVE



FLUID DRIVE

reduces
clutch wear

**AUTOMOTIVE TYPE
SAFETY BRAKES**

smooth brake action

ROLLER CARRIER UPRIGHTS

low friction—long life

HYPOID GEARING

30% greater strength

CHRYSLER ENGINE

65HP industrial engine
with floating power

**SHOCKLESS
STEERING**

passenger car
steering ease

Only **YALE**
combines all these
modern engineering
achievements in one
superior gas truck!

**NOW READY FOR YOU...developed to peak efficiency
after 2 years of intensive on-the-job testing**

JUST LOOK at the engineering and technical improvements built into this new YALE Fork Lift Gas Truck!

Here are exclusive features that will bring more time-saving, man-saving, money-saving advantages to your materials handling than was ever before possible!

In every vital part of this truck you get the finest new developments in automotive engineering—every part built for years of hard service—every part tested and re-tested under rugged on-the-job conditions.

That's why today you get smooth, powerful gas truck operation day-in day-out. On steep ramps, rough roadways, in any weather—this YALE Gas Truck *delivers*, moves, lifts and stacks the goods. Let us show you exactly how YALE can accomplish all of this in your plant. Write for the facts today.

Capacities up to 10,000 pounds

THE YALE & TOWNE MANUFACTURING COMPANY

In Canada write The Yale & Towne Manufacturing Company, St. Catharines, Ontario.

YALE is the registered trademark of The Yale & Towne Manufacturing Co.

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WRITE TODAY FOR FULL INFORMATION

The Yale & Towne Manufacturing Co., Dept. 44
Roosevelt Boulevard & Haldeman Avenue, Phila. 15, Pa.

I am interested in cutting my materials handling costs.

Please have your local representative call on me.

Please send me FREE detailed literature.

Name _____

Company _____

Street _____

City _____ State _____

YALE

MATERIALS HANDLING EQUIPMENT

Philadelphia 15, Pa.



67

VOL. 8, NO. 6

APRIL, 1951

FLOW is not the official publication of any group, society or other special interest: its editorial pages are unbiased and undominated.

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CONTENTS

FEATURES

Material Handling Marches on Chicago	32
Improved Textile Handling Four Ways	39
Maintenance and Safety Notebook	40
Cost Cutting Briefs	42
Battery Powered Monorail System	44
Hoist Spots 300-lb. Dies On Press	46
Are You the Man in This Picture	48
Electrified Materials Handling Equipment	91

PACKAGING MECHANICS SECTION

Handling Idea of the Month	55
Steelstrapping Methods for Bracing Carload Shipments	56
If You Can't Use Pallets to Stack	60

DEPARTMENTS

Letters to the Editor	7
News From the Sales Field.....	10
News, Views, Trends	18
Men in the News	19
Literature Featured in Ads	22
Association and Society News	36
New Products	68
Useful Literature	86
Opportunities	95
Advertisers Index	96

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BACKBONE FOR AN EFFICIENT MATERIALS HANDLING SYSTEM...

Westinghouse

FREIGHT ELEVATORS

One of industry's biggest headaches today is keeping production costs within profitable limits. And materials handling is a decisive factor in narrowing or expanding those limits.

If your business is a multiple-floor operation that requires an unobstructed flow of parts and supplies from floor to floor, elevators form the backbone of your entire handling system.

Elevators integrate the facilities of all your floors . . . make sure that time (and money) saved in the efficient flow of materials on one floor is not lost between floors. But, unless you make your freight elevators a planned part of your overall handling system, efficiency drops and costs get out of hand.

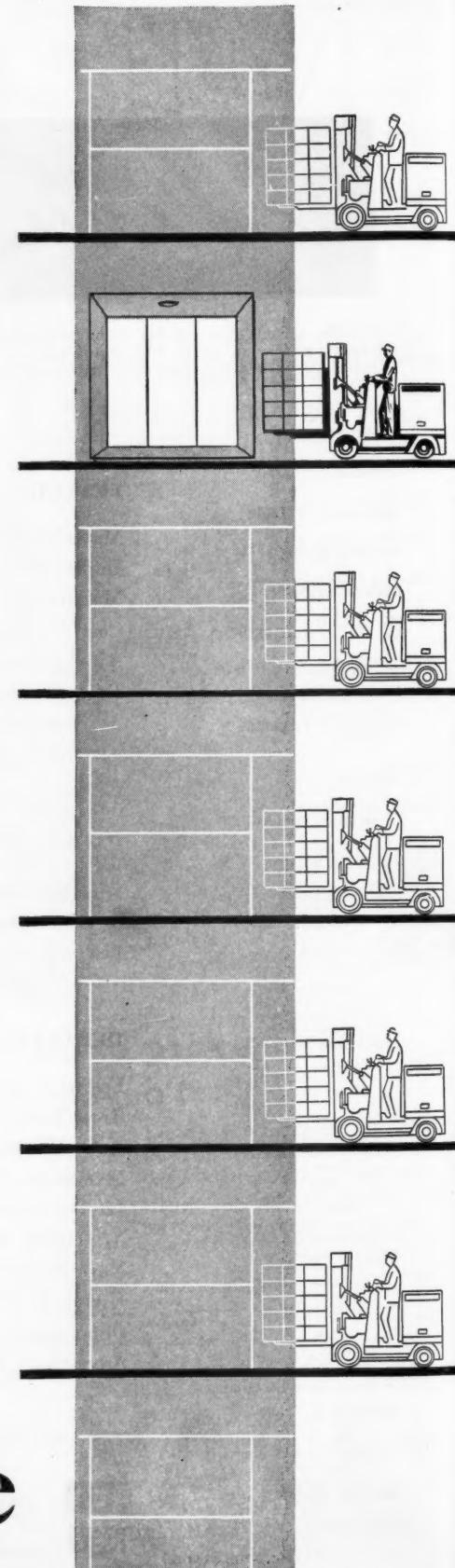
To help you plan cost-cutting vertical transportation, Westinghouse offers "The Buyer's Guide for Freight Elevators," (B-4402)—most complete source available on the proper selection and application of freight elevators. For your free copy, write today to the Elevator Division, Westinghouse Electric Corporation, Dept. L, Jersey City, N. J.

YOU CAN BE SURE...IF IT'S

Westinghouse

J-98609

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you buy
dependability
when you buy

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Outstanding among the "plus values" of Elwell-Parker trucks is their remarkable dependability that insures years of *extra service—dependability* that pays off in return of the investment many more times.

This built-in DEPENDABILITY—

- means Elwell-Parkers are not responsible for critical production bottlenecks due to truck down time for repairs.
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- results in E-P trucks always being assigned the toughest jobs in mixed fleets.

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All these "plus values" are the reason
Elwell-Parkers give you more
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Make your next truck the *finest* by ordering it from The Elwell-Parker Electric Company, 4233, St. Clair Avenue, Cleveland 3, Ohio.

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Elwell-Parkers are built through and through to match the finest machine in your plant. Illustrated is the new F-31T, 6000 lbs. capacity.



ELWELL-PARKER
POWER INDUSTRIAL TRUCKS
Established 1893

New MOBILIFT Tier-Master



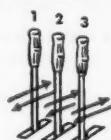
**Gives You 117" Lift
WITH
72" Overall Height**



Left—Operator using Tier-Master, moving 3rd-high loaded pallet and above, with mast lowered entering truck with same Mobilift and same load.

**2-way LEV-R-MATIC
Controls Perform
All Jobs**

1 2 3
MAST LIFT & FORWARD
TILT LOWER BACK



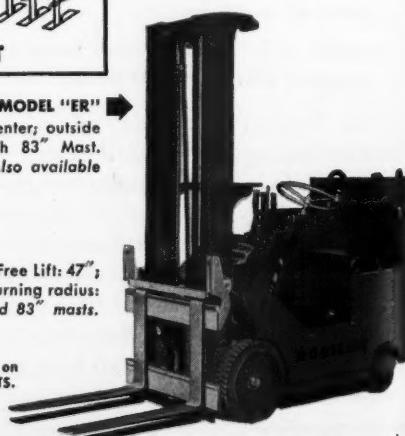
NO GEARS TO SHIFT

NEW "SIT-DOWN" MODEL "ER" →
2,000-lb. capacity on 15" load center; outside turning radius: 63"; shown with 83" Mast. (Lift Ht. 108"; Free Lift 57"). Also available with 63" mast.

◀ **MODEL "E" TIER-MASTER**

2,000-lb. capacity with 72" Mast (Free Lift: 47"); Mast Ht. Extended: 142") outside turning radius: 57". Also available with 63" and 83" masts.

WRITE TODAY for Complete Specifications on
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1113 Spring St., N. W., ATLANTA • 2730 San Pablo Ave., BERKELEY

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LETTERS to the editors

To FLOW:

We are currently making a comprehensive study of produce warehouse operations from the time of receipt of the commodities until shipped, covering the various stages of flow through the warehouse and incidental handling and services under these headings: unloading reefer cars; unloading trucks; palletizing load units; mechanized handling on pallets by fork and hand lift trucks; storage in coolers and open floor areas; protective services, refrigeration, etc; selection of orders; assembly of orders individually on wagons or by roller or belt conveyor to a common assembly point; truck loading.

In connection with these studies we are interested in obtaining reference texts of experience history covering the foregoing phases of operation. It occurred to us that you might be able to give us a lead as the availability of such material. . . . we shall appreciate your assistance.

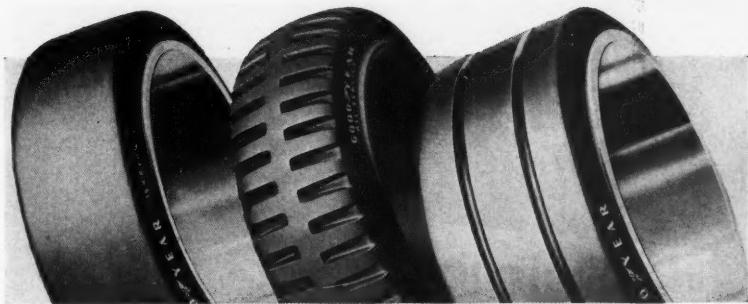
W. R. Mays
Baxter Warehouse Service

We have sent a batch of tear sheets to reader Mays that should help him in his study of the different warehousing operations he asks about. For more help, he might try the American Warehousemen's Association and the Material Handling Institute.

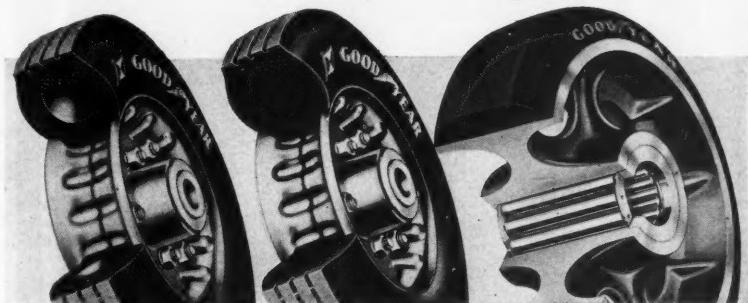
To FLOW:

Attached please find the reader service card from your February issue. I have checked four items for additional information.

I should like to get some information as to loading 4000# lifts into boxcars. These lifts are made up of 40 100# items "such as 10' angles, 10' tubing, etc.". I had in mind a collapsible crane that could



Operating costs rising? Save with Goodyears!



GOODYEAR makes a complete line of industrial tires, assuring you the *right* type, the *right* size tire for your particular job. The result is longer tire life, greater efficiency, lower costs. That's why, today more than ever, *it pays* to buy and specify Goodyear Industrial Tires.

FREE
TECHNICAL ENGINEERING
ADVICE AND SERVICE

To help solve your industrial tire problems, Goodyear maintains a staff of technical experts. Write: Goodyear, Industrial Tire Division, Akron 16, Ohio.

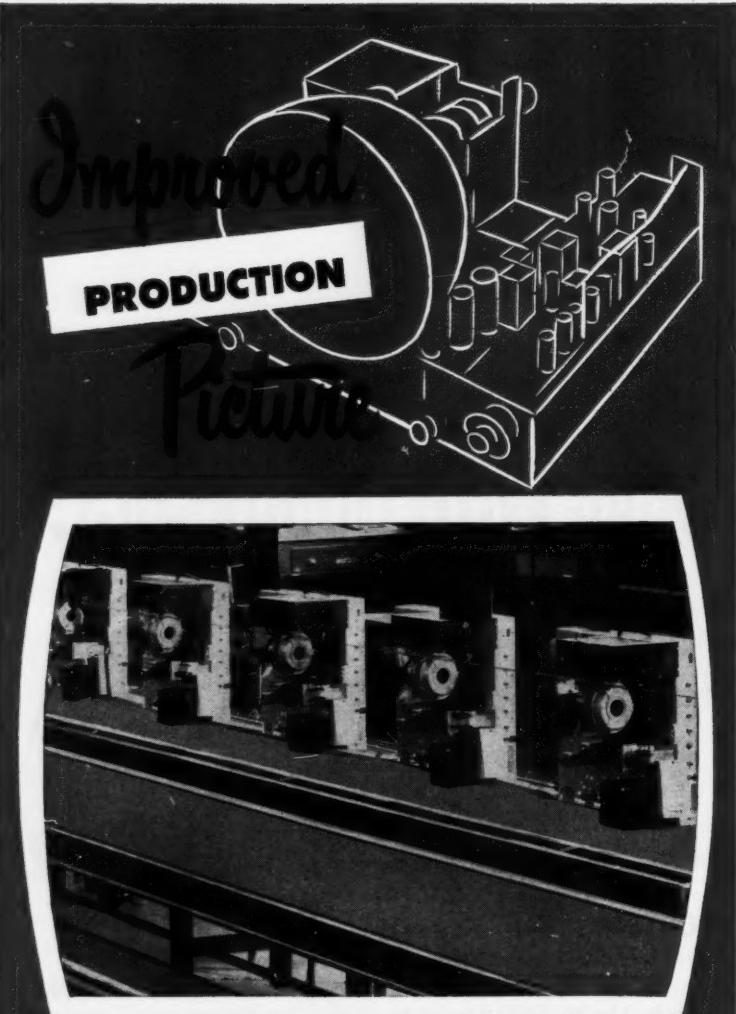


GOOD YEAR

INDUSTRIAL TIRES

We think you'll like "THE GREATEST STORY EVER TOLD" - Every Sunday - ABC Network

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BUSCHMAN CONVEYORS were installed by a prominent television manufacturer to increase production and to coordinate assembly with inspection and shipping. Assembly is performed as chassis move on **BUSCHMAN Belt Conveyors**. Chassis are sent to inspection and storage on **BUSCHMAN Roller Conveyors**.

Belt conveyors can be furnished level or inclined, stationary or portable. Regardless of product or problem, there is a **BUSCHMAN Conveyor** to meet your need. Write today for details.

PRODUCE MORE...FOR LESS

Buschman
Conveyors

THE E. W. BUSCHMAN CO., INC.
4450 Clifton Ave.
CINCINNATI 32, OHIO

Circle No. 8 on Reader Service Card for more information

quickly and efficiently be set up or taken down from a boxcar.—David B. Cooper, Superior Separator Company.

We have no case studies on hand from past issues which would describe the cut and dried method for this operation. One alternative might be to roll them in specially designed castered trucks. We are attaching a tear sheet from an article we recently published, describing such a move. Another possibility: shipping the loads in open-topped gondola cars. If you could do that, a portable crane or truck crane would save the time it takes to set up and take down a portable crane inside a boxcar. Still another alternative might be to ship on flat cars. If this sounds like we are suggesting you change your whole shipping system, we can only say that sometimes a change in shipping methods is far more economical than changing an existing handling setup. Shipping on flat cars would allow you to steel strap the load units and load them by fork truck.

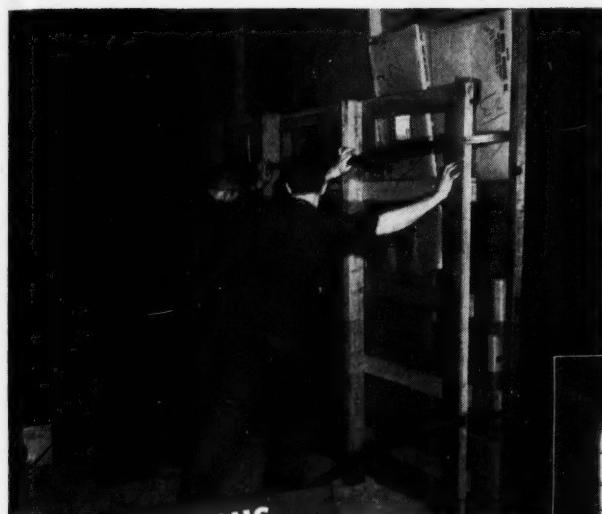
To FLOW:

I am interested in knowing the availability of any back issues of your publication that contain articles on pallet handling of material in bags. My immediate interest being handling sugar in 100 lb. bags on regular wooden 36" by 56½" pallets. These are being unloaded from cargo trucks and being stored in a warehouse under a 40' high ceiling.—Jacques Dreyfuss, Montevideo Refrescos S. A.

We are enclosing tear sheets from several articles describing pallet handling of bagged material. These should help solve your problem. If you have any more on the warehouse handling of bagged goods, let us know and we'll delve further into the subject for you.—Ed.

up or
David
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We are
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possi-
open-
could
truck
takes
rtable
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o ship
like we
your
n only
age in
e eco-
existing
n flat
strap
m by



STOP THIS

waste of manpower
and materials!

START THIS

use of permanent,
returnable bulkheads!



Get out your pencil and start figuring your dunnage cost using old-fashioned wooden gates and you'll quickly see the substantial saving you can effect by changing to permanent, *returnable* Pittsburgh steel bulkheads. You do away with lumber, straps, anchor plates and special tools, and each Pittsburgh Bulkhead can be installed by two men in two minutes. Moreover, each unit is so sturdily built

that it will last indefinitely and reduce damage claims to an absolute minimum. *Experience has already shown that a Pittsburgh Bulkhead will pay for itself in savings of labor and materials in an average of 20 trips . . . the rest is profit to you.* Why not start saving dunnage money now . . . write today to Dept. F-1, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pa.

BULKHEADS

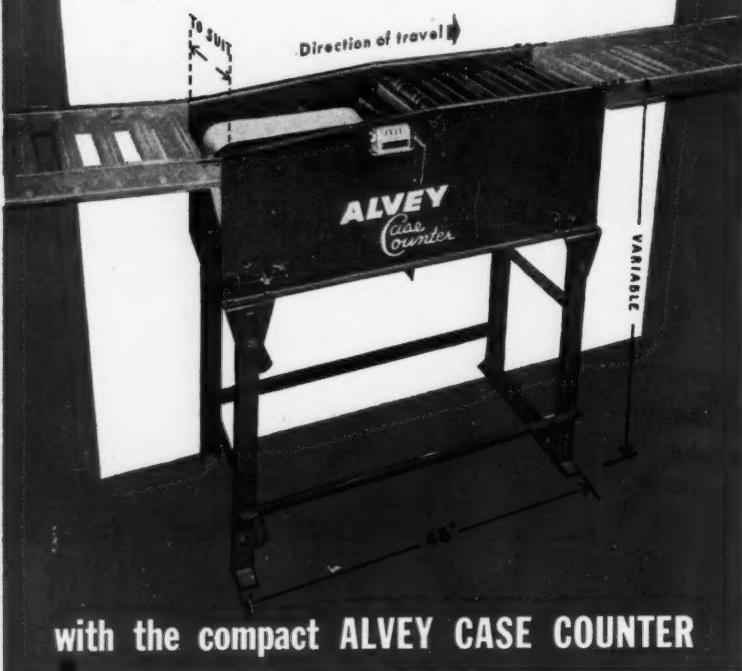
a product of **Pittsburgh Steel Products Company**

A Subsidiary of Pittsburgh Steel Company

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Count your packages

the fast, accurate, reliable way



with the compact ALVEY CASE COUNTER

Every package must "stand up and be counted." No slipping over two at a time as sometimes happens with conventional conveyor-line counters. Packages may move end to end, snug against each other, yet the Alvey Case Counter separates each unit for counting. A positive stop and air-cylinder lift work as a team to assure accurate count regardless. Get details. Write for Bulletin CC-1.

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Engineered
PACKAGE CONVEYORS

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Manhandling
adds to the cost
of your product

Circle No. 10 on Reader Service Card for more information

news from the SALES FIELD

Edmund A. Cyrol has organized E. A. Cyrol & Company, Management Consultants, with offices in Chicago. Until recently, Cyrol was an associate partner with A. T. Kearney & Company.

Kornylak Engineering Corporation has been authorized to represent and to sell the equipment made by the Continental Gin Company in the metropolitan New York and New Jersey area.

Appointment of Fred F. Welch of Portland as manager of the Hyster Company's retail store in Seattle has been announced by Hyster. Welch took over his new duties February 1st.

Samuel W. Gibb & Company, Los Angeles, has been appointed exclusive sales representative for the industrial truck line of Yale material handling equipment in a territory made up of Southern California and the Southwestern states. The company was organized recently by Gibb, who worked as general sales manager of Yale & Towne's Philadelphia Division at one time.

Establishment of a new factory branch in Houston and the appointments of three new branch managers were announced recently by William A. Burns, Jr., vice-president.

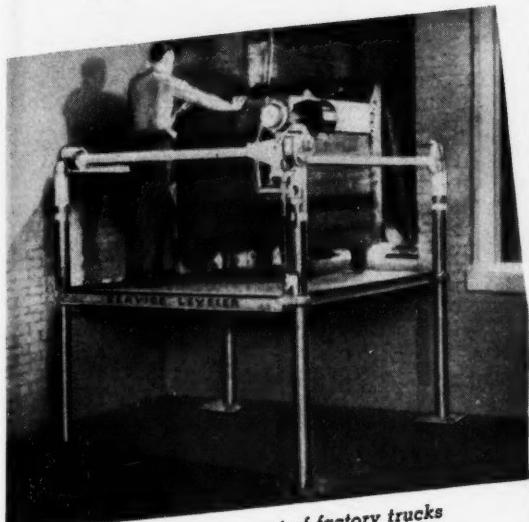
(Turn to page 14)

man-saver

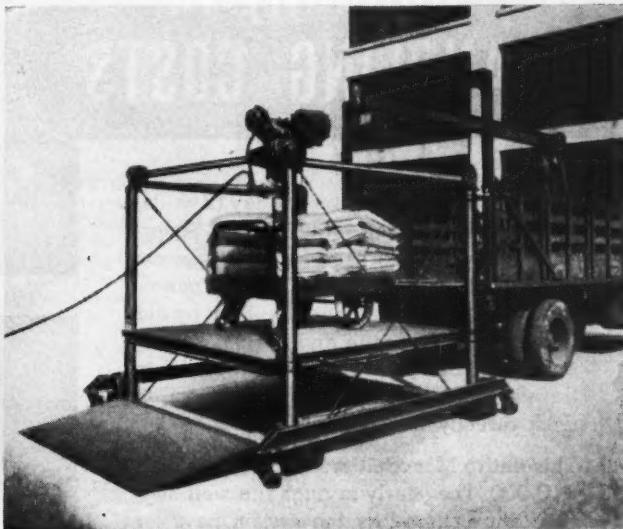
Handles your heavy loads from
level to level

Safely-Easily

NEW SERVICE LEVELER



*Simplifies movement of factory trucks
between two floor levels.*



*Portable model at additional cost—Can be moved to facilitate
loading and unloading of trucks in factory yard, etc.*

Save your workers a lot of backaches—save time, trouble and money, by handling heavy loads from level to level with the new Service LEVELER. Dependably powered by a rugged, fully-enclosed, 1 H.P. motor, it lifts as much as 6,000 pounds as high as 5 feet... in less than a minute. Loads, machine and operator are fully protected under all operating conditions. Outstanding safety features include: easy manual control of starting and

stopping at any height; automatic top and bottom limit stops; positive motor cut-off stops; centrifugal safety governor; slack cable shut-off; post guard rings. Here's a unit that can be installed anywhere in just a few hours at amazing low cost... requires no sub-surface installation... obsoletes slow, dangerous manual handling... pays for itself in a very short time. Write for detailed specifications today. *Immediate Shipment.*

COST-SAVING SERVICE MATERIALS HANDLING PRODUCTS



Motowlift Gas-Powered
Hydraulic Lift Truck



Service Hand Lifter



Service Liftable



Service Electric
Hydraulic Lifter



Service Hydraulic
Leverlift

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.

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This Simple

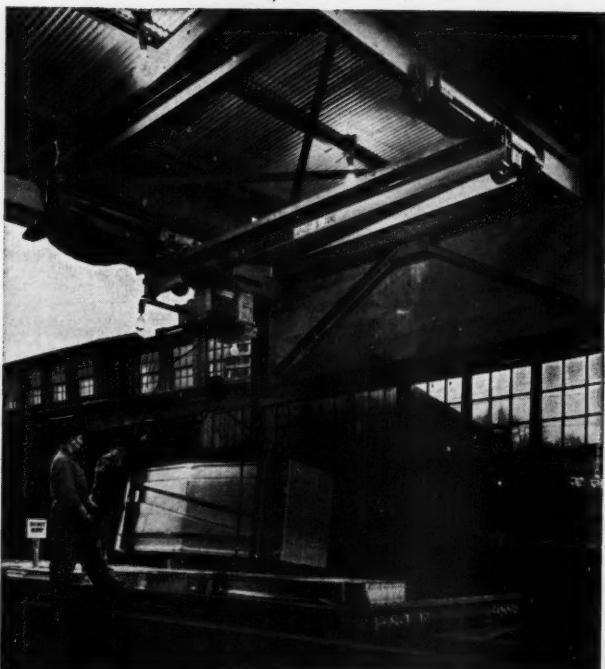
AMERICAN MONORAIL SYSTEM Saves... \$12,800

Annually in
HANDLING COSTS

A saving of 64 man-hours per day (2 shifts) resulted when this unique, simple American MonoRail Overhead Handling System was installed. Thirty-two freight car panels are strapped into one bundle—then by aid of a RailMaster Crane and special carrier on crane bridge, two men are able to transfer bundles from shipping room to dock directly into gondola cars.

This entire MonoRail system cost less than \$10,000. The yearly savings run well over this figure, therefore the system pays for itself in less than one year.

We'll be glad to apply this "know-how" to your handling problems—just drop us a note. No obligation, of course.



THE AMERICAN MONORAIL COMPANY

13129 ATHENS AVENUE

Circle No. 12 on Reader Service Card for more information

CLEVELAND 7, OHIO



here's

14

QUICK-CHANGE ATTACHMENTS

make the HD-5G a fleet of machines in one!



CHOICE OF FOUR BUCKETS:
Standard (1-yd.), Narrow
(3/4-yd.), Light Materials
(2-yd.) and Rock (1-yd.)



LIFT FORK has capacity
of 4,000 lb., lifting height
under fork of 8 ft., 10 in.



CRANE HOOK has lifting
height of 11 ft., 6 in.,
capacity of 5,000 lb.



OTHER ATTACHMENTS
include straight and
angledozer blades, V-type
Snowplow, Trench Hoe,
Tine Fork, Rock Bucket,
Drag Bucket, Teeth
for all buckets.

- HD-5G with Tracto-Shovel
- HD-20G with Tracto-Shovel
- Tracto-Loader
- Model IB Wheel Tractor
- Model D Grader with
Tracto-Loader
- A-C Power Units

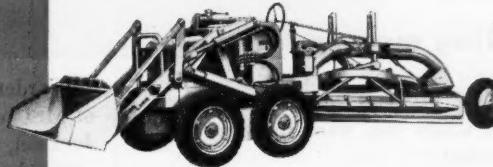
Flexibility

in material handling equipment

**Versatile A-C machines
do many jobs . . .
are not limited to
specialized service**

FOR HEAVY LIFTING, CARRYING, EXCAVATING use the Allis-Chalmers HD-5G Tractor and interchangeable Tracto-Shovel attachments. This outfit loads and transports big quantities of bulk or solid materials, frees several men to do other jobs. Works inside or outside plants — has the power, weight and traction to operate where other loaders bog down. Weighs 16,200 lb. with 1-yd. bucket. (HD-20G with 4- or 7-yd. bucket weighs 65,000 lb.)

FOR LOADING BULK MATERIALS use the rubber-tired, fast-working Tracto-Loader. Has hydraulically controlled bucket over driving wheels for easier steering. Two sizes: 10 cu. ft. and 3/4 cu. yd. Various interchangeable buckets and other accessories.



FOR POWERING hoists, generators, elevators, equipment of all kinds — use heavy-duty, high torque A-C engines. Designed for tractor use, they stand up in long, grueling service. Choice of fuels. Five sizes, up to 110 brake hp.

FOR MAINTENANCE, GRADING, LOADING use the Model D Motor Grader. Maintains roads, parking lots, plant areas — handles all types of grading — loads dirt, snow, any bulk material. Has many big grader design and performance advantages — at one-third the price. Allis-Chalmers gasoline engine, 34.7 brake hp.



FOR HAULING, SWEEPING, CRANE JOBS use the Model IB Wheel Tractor. Built low, fast, powerful, it easily hauls trailers up steep ramps, through narrow aisles, over tracks and rough planking. Equipped with crane, the IB lifts, moves and spots loads up to 2,000 lb. With easily attached sweeper, it removes snow, dirt, trash. Also available with winch, mower, V-type snowplow, rear power take-off and belt pulley. Develops 13½ drawbar hp.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U.S.A.

ALLIS-CHALMERS TRACTOR DIVISION, Dept. FL, Milwaukee 1, Wis.

Please send me complete information on the units checked:

Name _____

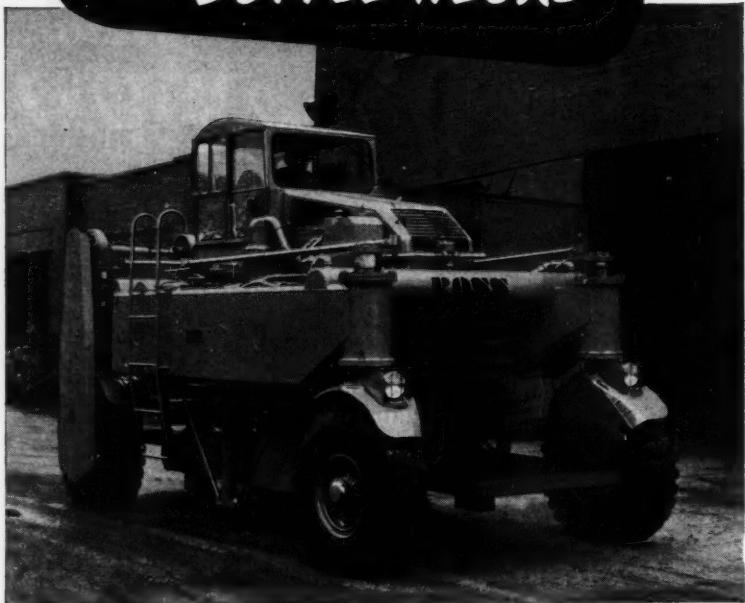
Company _____

Address _____

City _____ State _____

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ELIMINATE STEEL HANDLING BOTTLE NECKS



ROSS Series 100 CARRIER ...simplest mass handling method known!

Now...you can move 45,000-pound payloads of billets, bars, plate, in-process and finished steel *where* you want them *when* you want them...at a moment's notice!

Now...you can be free of the restrictions of a plant railroad handling system...its expensive trackage, cars, locomotives...costly, time-consuming switching operations!

Now...you can prevent congestion in the mill...free more mill space for production operations...eliminate costly re-handling...save time and money in getting out current orders!

How? With Ross Series 100...the *only* Carriers designed and built all the way through for rough, tough steel mill service...the *only* Carriers with that great reserve strength steel men demand. Self-loading and unloading, Ross Series 100 requires only a driver...and moves capacity loads at speeds up to 33 mph.

Don't overlook the outstanding advantages of the Ross Carrier Steel Handling Method...ASK STEEL MEN WHO KNOW! Get full details on Ross Series 100 Carrier...a 'phone call, wire or letter will do it.

Rely On
ROSS

THE ROSS CARRIER COMPANY

Direct Factory Branches and Distributors Throughout the World

280 Miller St., Benton Harbor, Michigan, U.S.A.

Circle No. 14 on Reader Service Card for more information

Sales Field . . .

(Continued from page 10)

dent of The Trailmobile Company. John D. Parobek is the new manager in Houston. Thomas Peacock will manage the Charlotte, North Carolina, branch; Robert S. Sawyer has been named manager of the Oklahoma City, Oklahoma, branch.

The B & A Elevator Company, Boston, has been appointed exclusive representative for Montgomery elevators and dumb waiters. Arrangements have been made for the company to handle the complete Montgomery line, including the hydraulic and self-contained elevators.

The John Gilliam Equipment Company, Dallas, was recently named sales representative for the Automatic Transportation Company. The firm, headed by John W. Gilliam, will serve the northern half of Texas.

Wardcraft Equipment Division of McLaughlin, Ward & Company, Jackson, Michigan, has been appointed sales engineers and stocking jobbers for Lovejoy variable speed transmission and Lovejoy flexible couplings.

Buhler Brothers, Inc., moved recently to a new plant at Fort Lee, New Jersey. Buhler spokesmen said the move was made because of increased sales expansion.

Star-Kimble Motor Division of Miehle Printing Press and Mfg. Company has appointed the Baldwin Company, Dallas, as its representative in the states of Texas, New Mexico and Oklahoma.

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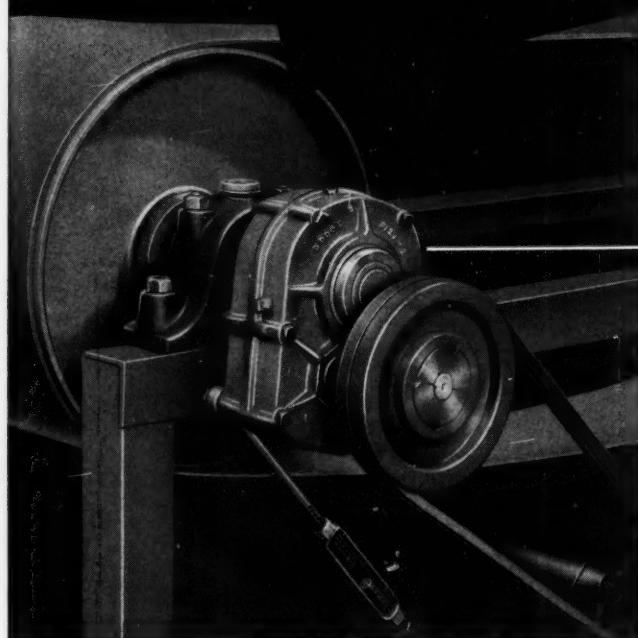
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FLOW

THE SPEED REDUCER THAT
SAVES YOU MONEY!



Dodge

Torque-Arm

America's Most Complete Line of
Shaft-Mounted Speed Reducers

- No special engineering required. No foundation to provide. No flexible couplings. No sliding base. No "lining-up" difficulties. No expensive installation. Stock TAPER-LOCK sheaves prescribed for each job to provide desired speeds. Application to other machines is practical and easy.
- Unit is driven through any V-Belt Drive. Torque-arm, fastened to any fixed object, anchors the reducer unit. Turnbuckle provides fast and accurate adjustment of belt tension.
- Backstop available from stock when required. Simple. Positive. Easily installed. Sealed inside the reducer housing.
- Compact, light weight, rugged. Quality built by Dodge for Dodge dependable service.
- Built in two series—Single and Double Reduction. Capacities from 1 to 27 h.p. Speeds from 12 to 330 rpm. Available from distributors' stocks.
- WRITE for special bulletin A602.

DODGE MANUFACTURING CORPORATION, 2300 Union Street, Mishawaka, Indiana

DODGE

→ of Mishawaka, Ind.

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name under "Power Transmission Equipment" in classified phone book.



FIRST
IN POWER TRANSMISSION
MACHINERY!



V-BELTS AND TAPER-LOCK SHEAVES



DODGE-TIMKEN PILLOW BLOCKS



ROLLING GRIP AND DIAMOND D CLUTCHES



SOLID STEEL CONVEYOR PULLEYS

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
CHICAGO THRIFT-ETCHING CORPORATION, 1555 SHEFFIELD AVENUE, CHICAGO, ILLINOIS

Circle No. 15 on Reader Service Card for more information

the truck of the future ...Today

LYON-Raymond's SPACEmaker

A triumph in tiering truck design that adds as much as $\frac{1}{3}$ rd more space to your present storage facilities!

Now there's a new standard in electric tiering trucks — the LYON-Raymond SpaceMaker! This new rider-type truck lets you trim from 4 to 6 feet off the width of each aisle and convert it to additional storage.



HOW? By actually right-angle tiering 4-foot pallet or skid loads up to 130 inches high from aisles only 6-feet wide. The secret is found in these exclusive LYON-Raymond engineered features:

SHORTER LENGTH Revolutionary SpaceMaker design eliminates need for counterweight — shortens the overall length!

MAGIC MANEUVERABILITY Offset drive wheel produces 200° turning arc — enables SpaceMaker to maneuver like magic!

LIGHTER WEIGHT Compact size permits use in low-capacity elevators and on lighter-capacity floors.

Learn more about the amazing new SpaceMaker — send for Bulletin 702 today. Better yet, ask to see LYON-Raymond's SpaceMaker demonstrated at the installation nearest you!

LYON-Raymond Corporation

Skid and Pallet Lifts • Hydraulic Elevating Equipment
Electric Power Trucks • Positioning • Sheet and Die Handling

LYON-Raymond Corporation

3341 Madison St., Greene, N.Y.

Gentlemen: Please send me Bulletin 702
on your new SpaceMaker Electric Tiering Truck.

NAME _____ TITLE _____

COMPANY _____

STREET _____

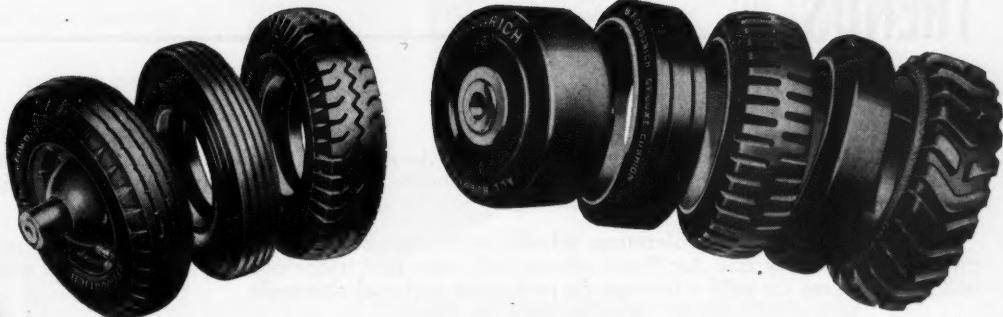
CITY _____ STATE _____

See the SpaceMaker demonstrated—booths 445 & 504, National Materials Handling Exposition

Circle No. 16 on Reader Service Card for more information

SPECIFICATIONS: SpaceMaker Model E2ST. Straddle Type, Telescopic Tiering Truck, 2000-lb. Capacity. Also in Non-Telescopic and Skid Platform Models.

B.F. Goodrich



Only a specialist can pick

the one right tire for your job!

IT TAKES a lot of know-how . . . of specialized training . . . to be able to decide which type, size and tread of an industrial tire is especially suitable for a specific job. In fitting the right tire to the job and in giving

the right care and maintenance, you can increase industrial tire life as much as 100%. The B. F. Goodrich Tire and Wheel Analysis Plan service helps do this for you . . . and it's yours with no obligation.

**Let this man help you maintain
your equipment with  ANALYSIS**

Your local B. F. Goodrich man is a tire specialist. He's been given training so that he can analyze your industrial tire operation.

Let him study your loads, hauls, equipment, floors and hauling surfaces. Then he'll be able to recommend the correct type and size for your particular operation.

He'll also give you expert advice on industrial tire care and maintenance. His advice is impartial and unbiased . . . for only B. F. Goodrich has a complete line of tires: a special type for every job (solids, semi-pneumatics and pneumatics), and a full range of sizes. *A similar program is available for manufacturers of industrial hauling equipment.*



Use the coupon for full details at no obligation.



The B. F. Goodrich Co.
Department TW-102
Akron, Ohio

Please give me additional information on your Tire and Wheel Analysis plan.

Name _____

Title _____

Company _____

City _____ State _____

Circle No. 17 on Reader Service Card for more information

NEWS VIEWS TRENDS

242 EXHIBITORS have completely bought out all booth space for the 20th annual National Packaging Exposition. The four day show will be held in Atlantic City's Auditorium, April 17-20. Show spokesmen figure more than 80,000 feet will be covered by the booths.

Top billing among the conferences scheduled for the show goes to a session on military packaging requirements. Army, Navy and Air Force officers will take part in the session. Another group will do some crystal ball gazing, come up with a forecast on packaging material shortages.

A SUMMER COURSE in management has been planned by the State University of Iowa, running June 11-23 in Iowa City. The course covers production planning, motion and time study, plant layout, job evaluation and a long list of other subjects. Interested? Write J. Wayne Deegan, 122 Engineering State University of Iowa, Iowa City, Iowa.

WRANGLING OVER the proposed coal conveyor belt from Lake Erie to the Ohio River is still going strong. 100 coal and power producers meeting in Cleveland recently were told by Major General Robert G. Breene (Retired) that the scheme was economically unfeasible. Breene said that even if the line were built, steel mills could not afford to convert from present receival methods.

SOVIET SATELLITES no longer receive copies of FLOW. The State Department has given its permission to cut off the sale of copies going to Russia and the Iron Curtain Countries.

FIELD SECURITY TEAMS of the Munitions Board have finished the second phase of a detailed study of security measures in industrial plants. The teams are made up of representatives of each military service. Idea of the study is to help industry develop its security program. The teams have found that although most programs are still in the talking stage, considerable progress has been made in program planning.

COPIES OF the proceedings of the Westinghouse Materials Handling Conference held last October in Buffalo are available on request. The supply is limited—if you want a copy, circle number 125 on the reader service card bound into this issue.

MEN in the news



W. A. Roberts
Allis-Chalmers



W. C. Johnson
Allis-Chalmers

... at Jervis B. Webb Company

Eric O. Melmer has been made Secretary and Chief Engineer of the company's Los Angeles subsidiary. Melmer has been associated with the conveyor manufacturing industry for over 20 years as a designer and engineer.

... at Aerol Company

Ralph Osborn has been named vice president and general manager of Aerol and Airquipment companies, both Lockheed subsidiaries. Osborn has been with Lockheed since 1937. Edwin H. Anderson succeeds Osborn as sales manager of Airquipment.

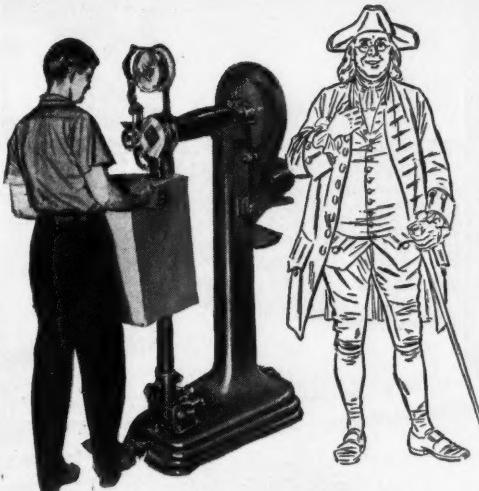
... at Automatic Transportation

J. M. Johnson has been promoted to sales manager of the Automatic division. Johnson had been assistant sales manager; he has been with Automatic twenty-five years.

... at Allis-Chalmers

W. A. Roberts has been elected president, succeeding the late Walter Geist. W. C. Johnson was named executive vice-president for the entire company. R. S. Stevenson was named vice-president in charge of the tractor division. Other

(Turn to page 30)



**"Never leave that
till tomorrow
which you
can do today."**

—*Ben Franklin's Almanac, 1757*

If waste and inefficiency ruin thee and thy country today,
how shall thee profit by finding a horseshoe tomorrow?

—*Acme Steel Notebook, 1951*

The Acme Steel steel strapping and wire stitching equipment you have today means efficient and thrifty production in your packaging, shipping and materials handling operations. Protect it well.

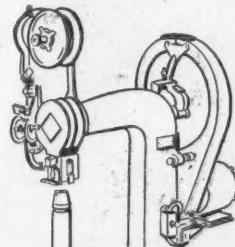
In spite of an increase in productive capacity, U.S. military requirements on some products make it impossible for Acme Steel to meet all the requirements of our more than 50,000 customers. To make the best use of Acme Steel flat strapping, stitching wire and other products available to you, let our representative put Acme Steel's experience and ingenuity to work for you.

In the past 71 years, we have helped our customers weather many a difficult period. We are ready and willing now to help you keep your tools on the job or develop new setups that will increase efficiency in your operations and minimize waste.

Information for ready reference on Acme Steel products is available upon request.

ACME STEEL COMPANY

Dept. F-41 2838 Archer Avenue, Chicago 8, Illinois
We have 46 service offices in the United States and Canada. If not listed in your telephone directory, write us.



Five things you can do to keep your Acme stitching machines on the Job!

1. Clean and oil every day.
2. Never operate stitcher without material in stitching position.
3. For perfect stitching, check work regularly. If in doubt about any operating difficulty, refer to service manual (additional copies sent upon request) or submit stitched material, identified by machine type and serial number, to Customer Service Department, Acme Steel Company.
4. From time to time moving parts need replacement—keep a supply on hand to make quick, minor replacements.
5. Ask us about the Acme Steel "3-WAY SERVICE PLAN" for equipment repairs.



In 1950 Acme Steel had 9135 stockholders—a growth of 21.1% over 1949. They comprised 3223 men, 3089 women, 2260 joint accounts, 563 trusts, corporations and institutions. 646, or 15.9%, of our employees are stockholders.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVER-STITCHERS and ACME SILVERSTITCH WIRE for box stitching • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slot stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, barbed box straps, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, tool mounts, reel stands, coil holders, coil trays.

Circle No. 18 on Reader Service Card for more information

PALLETAINERS SPEAK FOR THEMSELVES!

Case histories prove the superior advantages of the PALLETAINER unit-load handling system. USP PALLETAINERS carry two-ton loads, stack securely, give full visibility, increase storage space, expedite flow of all types of materials. Ask us for an engineered application.

25%
PALLETAINER sides fold down
to 25% of opened size for
space saving returns—favor-
able return rates promote
PALLETAINER shipping.

**UNION STEEL
PRODUCTS
COMPANY**

Materials Handling Division
ALBION, MICHIGAN

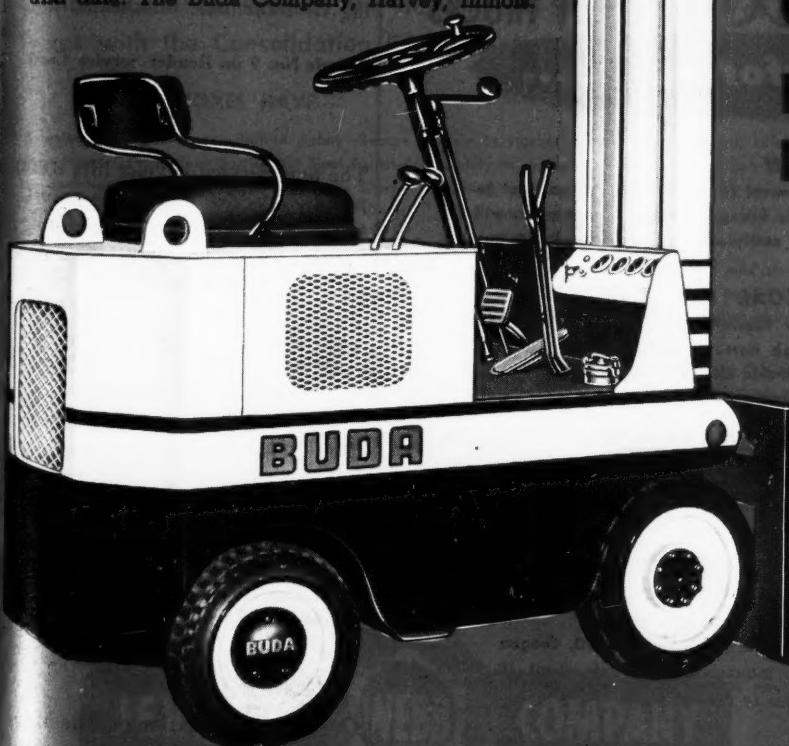


NEW BUDA 2000 LB FORK LIFT TRUCKS

Fast, powerful, compact, maneuverable, ruggedly built—Buda 2000 lb. Fork Trucks are the most modern trucks made. Designed by top-flight materials handling engineers, they incorporate the latest improvements in safety, comfort and operating advantages.

Thoroughly and carefully job-tested, the new Budas give you more truck... more material handling efficiency for your money. They are available in 24" and 15" load centers, offering 9 to 23% more load carrying capacity.

See them in Booth 503, or write for Bulletin and data. The Buda Company, Harvey, Illinois.



BUDA

THE LINE WITH ALL 3 FOR DIVERSIFIED HANDLING



SHORTER LENGTH

NARROWER WIDTH

SHORTER TURNING RADIUS

QUICK CHANGE CLUTCH

**EASY OPERATING, SINGLE
LEVER GEARSHIFT**

4TH NATIONAL
**MATERIALS
HANDLING
EXPOSITION**

INTERNATIONAL
AMPHITHEATRE
CHICAGO

APRIL 30-MAY 4
1951



Your **Hi DUTY*** LIFT TRUCKS mean **Hi Performance...**

ECONOMY OF OPERATION

The Hi DUTY is the most economical fork lift truck you can put to work in your plant! Its extremely low gas and oil consumption will amaze you . . . its freedom from costly maintenance will please you.

MANEUVERABLE - PRACTICAL

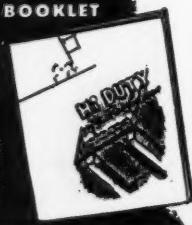
The Hi DUTY handles like your family car . . . it will maneuver capacity loads with ease, through narrow aisles, over weak floors, inside rail or motor freight cars, inside elevators. There is a practical size available to meet your requirements.

Exclusive HYDROFLEX CLUTCH

The Hi DUTY HYDROFLEX CLUTCH will positively not grab or chatter, a highly important feature when handling big loads. It gives far longer life than any other lift truck clutch.

*HI DUTY LIFT TRUCKS are manufactured by Transitier Truck Company, Portland, Ore.

SEND FOR
FREE
BOOKLET



TRANSITIER TRUCK CO.
2477 N.W. 23rd Ave., Portland 10, Oregon

Please send information and facts about Hi DUTY LIFT TRUCKS. I am interested in a plant demonstration. Please send me name of nearest dealer.

Name Title

Firm Name

Address

City Zone State

Circle No. 21 on Reader Service Card for more information

LITERATURE featured in ads

Technical information on its corrugated shipping containers is offered by Robert Gair Company, Inc. Gair offers its help on your shipping container problems, too.

Circle No. 49 on Reader Service Card

Can you use packing spacers? Central Fibre Products Co., Inc., makes them as cylinders, blocks or rolls to protect your shipments. Samples and prices are free for the asking.

Circle No. 54 on Reader Service Card

Pittsburgh Steel Products Company wants to show you how to knock down dunnage costs by using its returnable bulkheads.

Circle No. 9 on Reader Service Card

The new Service Leveler lifts 6,000 pounds 5 feet in less than a minute to speed level-to-level handling. Service Caster & Truck Corp. tells about it in new literature.

Circle No. 11 on Reader Service Card

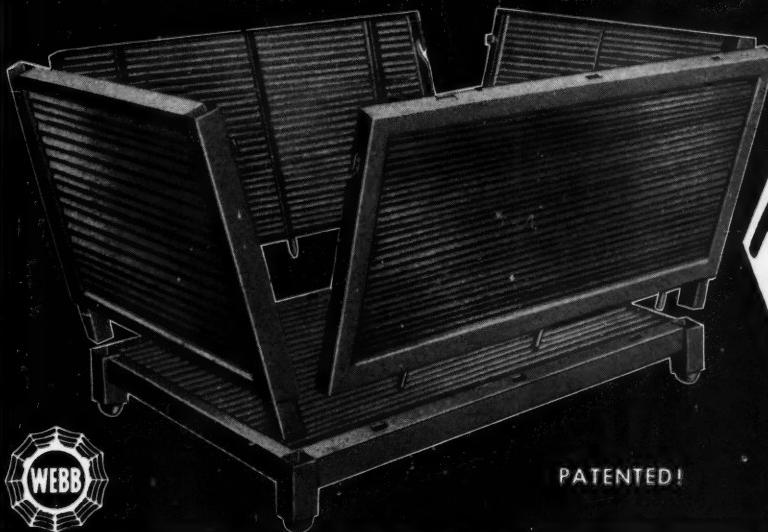
Every package must "stand up and be counted" on the Alvey Case Counter. Alvey Conveyor Mfg. Company shows how the new counter works in its latest bulletin.

Circle No. 10 on Reader Service Card

Complete information on The Mercury Mfg. Co.'s A-310 trailer—and other Mercury trailers—is given in Mercury's new bulletins.

Circle No. 40 on Reader Service Card

A NEW JERVIS B. WEBB CO. Materials Handling System



The **HAZEN** **KNOCK-DOWN** **MATERIALS** **HANDLING** **BOX**

The Most Amazing Basic Materials Handling Innovation in Years—the Hazen Box with its Patented Nesting Features and Built-In Safety Combines, and Far Exceeds, the Stacking and Strength Factors of Rigid Boxes with the Consolidation Features of Other Collapsible Boxes.

HAZEN BOXES HAVE—

Patented Nesting Features—Built-In Safety—Square Tube Frame Construction—Corrugated Steel Panels—Bayonet Hook Latching Arrangements for the Sides—Nesting Plugs at the Bottoms of Base Legs 1½" Deep.

DIMENSIONS OF "A" BOX

O.D. 40" x 48"

Height 31½" (Nested 30") (Inside 25")

Floor Clearance 4" (Nested 2½")

Cubic Footage 27.5'

Weight 280 lbs.

Capacity 4000 lbs.

HAZEN BOXES—

Can be stacked (stored or transported) safely and rigidly in multiple numbers due to their patented nesting features.

Have removable side panels, pieces can be removed or loaded easily—safely—by lifting out side panel. Can be disassembled in 30 seconds and stored in the ratio of 10 boxes in the space required for 4 loaded boxes—effecting great savings in plant floor space.

Eliminate "shadow" tonnage—they not only save in freight car or trailer loads through their several multiple stacking features but on return of "empties" require only, when disassembled, about 30% of loaded vehicle space.

Reduces lifting and fatigue—speeds up production. Boxes containing heavy materials can be placed next to the worker who can lift the pieces with ease by removing the sides nearest him—increase number of pieces handled per day.



Fork truck operators can, with ease, stack or unstack rigidly stored boxes with great economy of space. When not in use, disassembled Hazen Boxes save great amounts of plant space. As illustrated, 1001 empty Hazen Boxes can be stored in a space only 44'x 32'.



Fork trucks need no longer be limited to carrying single box loads. Trucks can easily carry 3 loaded Hazen Boxes safely—possibly because of the patented nesting features holding the boxes securely together.

See the Hazen Knock-Down Box at Our Booth No. 219

4th National Materials Handling Exposition

INTERNATIONAL AMPHITHEATRE, CHICAGO

• APRIL 30 — MAY 4, 1951

Write for new brochure giving full information.

JERVIS B. WEBB COMPANY

8935 ALPINE AVE.
DETROIT 4, MICH.

CONVEYOR ENGINEERS AND MANUFACTURERS

OFFICES IN
PRINCIPAL CITIES

Circle No. 22 on Reader Service Card for more information

CUPOLA
CHARGING
MONORAIL

For Dependable CAB-OPERATED MONORAIL SERVICE

Shepard Niles offers you . . .

1. THE WORLD'S MOST COMPLETE LINE OF MONORAIL HOISTS—designed and built to withstand the most severe service—thus providing the widest possible range of machines from which to choose.
2. VALUABLE APPLICATION ASSISTANCE—the result of almost fifty years of specializing in material handling problems in every type of industry.

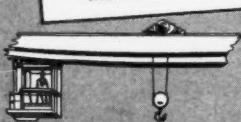
We welcome an opportunity to study your needs and make recommendations. The tougher your problem, the more reason there is to call in a trained Shepard Niles specialist. He will save you time and cost in subsequent years of operations. Write us today.

COAL HANDLING
MONORAIL

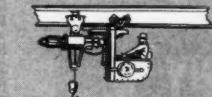
HANDLING STEEL
IN STORAGE

Shepard Niles

CRANE & HOIST CORPORATION
Makes and sells all three lifting tools for airborne shop loads



CRANES • Overhead



HOISTS • Cab Operated



HOISTS •
Floor
Operated

466 SCHUYLER AVENUE • MONTOUR FALLS, N. Y.
Circle No. 23 on Reader Service Card for more information

Roycraft Models, Inc., makes three-dimensional models that help you put your layout ideas across. Roycraft literature shows what the models can do for you.

Circle No. 103 on Reader Service Card

A catalog of its floor trucks is free for the asking from Orangeville Mfg. Co.

Circle No. 75 on Reader Service Card

Catalog A-57 from the Baughman Mfg. Co. shows off the Baughman line of conveyor equipment.

Circle No. 56 on Reader Service Card

Crane scales weigh your loads as you lift them, without any hitch in the work flow. Hydroway Scales, Inc., tells about its line of crane scales in a new catalog.

Circle No. 60 on Reader Service Card

A few quick pulls on the anchor chain of the Nolan Co.'s 1-man car door opener gets any freight car door open in a jiffy. Saves time, labor and smashed fingers. Nolan literature tells about it.

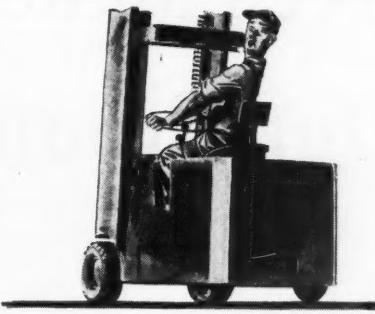
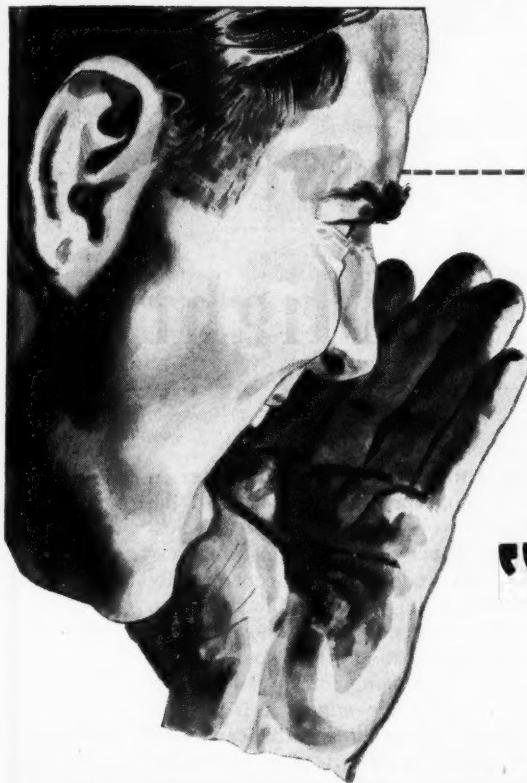
Circle No. 57 on Reader Service Card

Union Special Machine Co. says it's easy to find the right unit for your bag closing jobs in Union's new Bulletin 200.

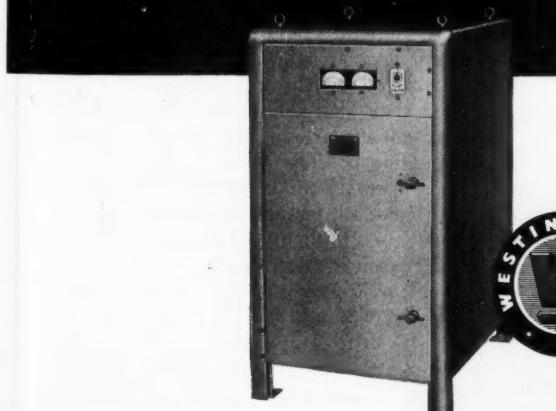
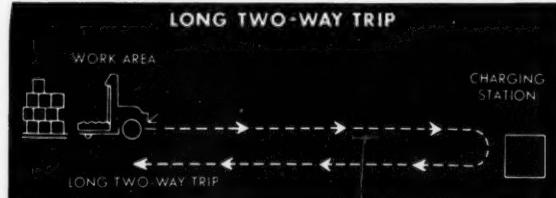
Circle No. 55 on Reader Service Card

Because it handles more loads per hour with less men and less crane time, Cullen-Friestadt's C-F Lifter should be the answer to your sheet handling questions. Bulletin SL-25 tells about it.

Circle No. 76 on Reader Service Card



"HEY! Is that trip necessary?"



Put Rectox® Chargers at strategic crossroads. Save trips to central charging stations. Valuable time is often consumed in returning trucks to central charging stations for recharging. This trip is not necessary. Place Westinghouse Rectox Industrial Truck Chargers at strategic locations throughout your plant and eliminate these long runs.

You can do it with Rectox. Anyone can operate them. They are completely automatic. Just plug them in any a-c outlet and forget them. In addition:

- ★ One unit serves 80% of your applications.
- ★ No taps to change, charging cycle is completely automatic.
- ★ No energy wasting resistor. No moving parts.

MORE DATA? Ask your Westinghouse representative for a copy of DB-19-040 or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.
J-21620



Circle No. 24 on Reader Service Card for more information

Let's Make the Most of Our Productive Might

THE productive might that has given America the most fruitful peace-time economy in history—the productive might that has backed to a victorious limit in two twentieth-century wars the fighting men who inevitably are our first line of defense—is facing an even greater test. It must not—it cannot be wasted!

The era of fighting and winning wars, and settling back during interims to "business as usual," is past. When it passed, how it passed, doesn't matter. What does matter is that from here on in, perhaps, there'll be no more "indolent" years—no more building of bathtubs to the exclusion of battleships; no more butter at the expense of bombs.

But America's unmatched productive might is fully capable of building bathtubs and battleships, of providing butter and the bombs requisite to war or to prevention of war; capable, that is, if properly employed—if none of it is wasted.

More And Better Tools Needed

THIS means that the manpower and womanpower left to industry after military needs have been satisfied, must be given every cost-cutting tool, every time-, labor- and muscle-saving aid known to man. It means that these tools must be employed intelligently and efficiently.

At the Fourth National Materials Handling Exposition,* to be held in

the International Amphitheater in Chicago, April 30—May 4, 1951, the CLARK EQUIPMENT COMPANY'S INDUSTRIAL TRUCK DIVISION, along with several hundred other producers of materials-handling equipment, will show to industry the newest, the most efficient and the most effective tools in the world for *making the most of America's productive might*. It is a show that no industrial executive can afford to miss—it is the MUST of the Industrial Show year. It is a MUST not only from the point of economy and profits within your own operation—but also from that of *accomplishing the vast production necessary to the new Military Economy without imposing harsh austerity on the Civilian Economy*.

More Power For Manpower —In Action

CLARK will show and demonstrate its full LEADERSHIP LINE of fork-lift trucks, powered hand trucks and industrial towing tractors. Among them will be several machines never before shown—some of them not yet in production. The exhibit also will present special handling attachments of proved worth, and demonstrations of their rich usefulness.

By all means attend and study this tremendously important show. And make a special point of seeing the CLARK exhibits and demonstrations of the best machines in their field for giving MORE POWER to MANPOWER.

(*We'll be glad to supply registration—admission tickets. Just address your request to the Clark Equipment Co., Industrial Truck Division, Battle Creek 13, Michigan, telling us how many you want.)

Complete specs on Mobilift's new Tier-Master fork lift truck and other Mobilift trucks are given in latest Mobilift literature.

Circle No. 6 on Reader Service Card

A guide to correct shipment addressing methods has been worked up for you by Marsh Stencil Machine Co.

Circle No. 51 on Reader Service Card

Bassick Company will help you iron out your handling problem, if casters can do it.

Circle No. 33 on Reader Service Card

Thomas Laughlin Co. has made up a catalog-data book that tells you how to choose the right wire rope and chain fitting for every job.

Circle No. 70 on Reader Service Card

"Conveyors by Olson for Every Purpose" is the title of a new catalog put out by Samuel Olson Mfg. Co., Inc. The book shows every conveyor Olson makes.

Circle No. 64 on Reader Service Card

Metzgar Co. tells about its floor-to-floor Power Helper in latest literature. Metzgar says the unit speeds shipping dock work by 500%.

Circle No. 85 on Reader Service Card

Transitier Truck Co. claims its Hi Duty lift truck handles like your family car. Transitier's latest catalog shows off its complete line of lift trucks in different capacities.

Circle No. 21 on Reader Service Card

Materials HANDLING EQUIPMENT

Custom Built To Meet Your Needs

Standard PLATFORM



Inverted end angle.
One piece binding angle.
Without end binding angle.
Heavy angle welded legs.

Hardwood, metal armored, fully protecting wood and holding it securely, built to customers' specifications.

Metal Bound WOOD BOX



This box has four-way lift truck entrance (side or ends). When ordering be sure to give underneath clearance required for your lift truck.

TWO STANDARD SIZES

Item NS-249A is 34" x 42" x 20" deep, plus leg height.

\$3585

Item NS-249B is 34" x 48" x 24" deep, plus leg height.

\$3965

Metal Bound PUSH TRUCK



May be used as a push truck or with lift truck. Built of all hardwood, completely metal bound, all welded construction, no bolts used. Four sturdy, 5" swivel casters.

TWO STANDARD SIZES

Item NS-418A \$4360

Measures 24" x 36" x 26" high overall. Weight 185 lbs.

Item NS-418B \$4955

Measures 28" x 48" x 30" high overall. Weight 260 lbs.

CORRUGATED BOX with legs



Item B-746

Ideal for moving or storing heavy metal parts; built of heavy corrugated steel; reinforced throughout with angle iron. Legs are designed to permit complete accessibility with fork or power lift truck. Made in any size or load capacity to meet buyer's specifications.

When ordering please give item number.
Prices subject to change without notice.
Write for Catalog.

DESIGNED AND MANUFACTURED BY

Palmer-Shile Co.

16012 FULLERTON AVE., DETROIT 27, MICH.

NEW!

READY-POWER

Diesel-

electric

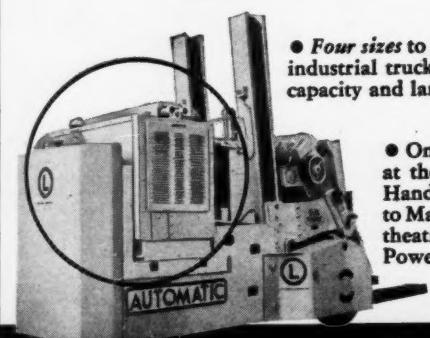
units

FOR HEAVY-DUTY ELECTRIC INDUSTRIAL TRUCK OPERATION

- Featuring amazingly low-cost operation, long life and reduced maintenance.

- Four sizes to power electric industrial trucks of 6,000 lb. capacity and larger.

- On display for the first time at the 4th National Materials Handling Exposition, April 30 to May 4, International Amphitheatre, Chicago, Ill. Ready-Power Booths: 427-428.



The **READY-POWER** Co.

3838 Grand River Ave., Detroit 8, Michigan

Circle No. 27 on Reader Service Card for more information

28

A free booklet that's designed to help you with your bulk storage problems is offered by Sauerman Bros., Inc.

Circle No. 72 on Reader Service Card

Signode Steel Strapping Co. wants to show you how to get better shipping protection at lower cost. New Signode literature tells the story.

Circle No. 45 on Reader Service Card

The Nutting jack is the only mechanical jack without springs, according to Nutting Truck and Caster Company. Bulletin 48-JS tells about it.

Circle No. 71 on Reader Service Card

If you want dependable cab-operated monorail service, Shepard Niles Crane and Hoist Corp. thinks it can help you. Its new catalog shows the full Shepard Niles line of monorail hoists.

Circle No. 23 on Reader Service Card

The complete line of Towmotor fork lift trucks and tractors is described and illustrated in new literature from the Towmotor Corporation.

Circle No. 35 on Reader Service Card

APRIL, 1951 • FLOW

See the Complete

BARRETT Line

4TH

NATIONAL MATERIALS HANDLING EXPOSITION

PLAN NOW
to attend!

See the big
BARRETT
Show

April 30—May 4

INTERNATIONAL AMPHITHEATRE
CHICAGO

HT
LIFT-TRUCK



J-R
LIFT-TRUCK



MR
LIFT-TRUCK



EX
LIFT-TRUCK



ED
LIFT-TRUCK



POWER-OX



HI-LIFT
POWER-OX



DIE TABLES



ROCKERACKS



DOLIES



BARREL TRUCKS



CASE-Y



CHISEL

ELEVATORS



SKIDS



NIFTY
LIFTER



The Barrett Exhibits will include
the complete line of Crescent Elec-
tric Trucks and Tractors manu-
factured by the Crescent Division
of Barrett-Cravens Company.

B
ARRETT

BARRETT-CRAVENS CO.

4619 S. Western Blvd., Chicago 9, Ill.

Representatives in All Principal Cities

Can. Licensee: S. A. Armstrong, Ltd., Toronto, Canada

ONE MAN DOES MORE THAN 3 OR 4...WITH A BARRETT

TAKE THE LOAD OFF YOUR MIND

with **Fairbanks®**

**STEEL-FRAMED
PLATFORM TRUCKS**



Load 'em high...treat 'em rough...Fairbanks steel-framed trucks always come back for more. Tough select oak platform, bolted to a sturdy steel frame, mounted on famous smooth-running Fairbanks swivel casters...give you low cost service, mile after mile, year after year.



Series 21 **LOCK-WELD SWIVEL CASTERS** eliminate the greatest cause of caster failure: the king pin.

Fairbanks Steel-framed **HAND TRUCKS**...a type for every purpose...in every industry.



VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

Circle No. 29 on Reader Service Card for more information

Men In The News . . .

(Continued from page 19)

er new Allis-Chalmers appointments: J. L. Singleton to vice-president in charge of the general machinery division; A. W. Van Hercke to vice-president in charge of engineering for the tractor division; Fred Mackey to vice-president in charge of general machinery manufacturing.

. . . at **Thew Shovel Company**

C. B. Smythe, President, received a diamond in commemoration of his 40 years of service with the company. R. P. Kelly, Thew's Service Manager, and machinist E. R. Linn also received 40-year diamond awards.

. . . at **Mercury Mfg. Company**

The following officers were elected at the recent annual meeting of stockholders and directors: Orvis T. Henkle, Chairman of the Board; C. Winslow Henkle, President and Treasurer; John R. Bensley, V. P. in charge of Sales Research; Orvis T. Henkle, Jr., V. P. in charge of Sales; Harold Milz, V. P. in charge of Engineering; Philip K. McCullough, V. P. in charge of Manufacturing.

. . . at **Yale & Towne**

Albert A. Goodman has been named Manager of Quality Control for the Philadelphia Division. Goodman comes to Yale & Towne from Westinghouse Electric.

. . . at **Lamson Corporation**

John W. Willard has been given the job of Sales Training Manager and Director of Personnel. Ephraim M. Detwiler has been named Manufacturing Manager.

. . . at **Towmotor**

E. C. Iverson has been made Chief Engineer. Iverson is well known in engineering; he has been associated with the J. D. Adams Mfg. Co. in charge of all product design and development.



Plant traffic flows on time . . . all the time . . . with Stanley Magic Doors

Materials move swiftly, safely—without interruption—when Stanley Magic Doors swing into action.

Actuated by the "Magic Eye" (photoelectric) or by other means on special installations like the one pictured here, Stanley Magic Door operators (1) open doors automatically on approach, (2) hold them open, (3) close them quickly, silently, after traffic has passed.

Congested doorways, traffic slow-downs become a

thing of the past. Damage to product and doors is eliminated. Air conditioning and heating are more efficient, more economical. And the more traffic the better investment Stanley Magic Doors will prove to be.

It will pay you to get the complete facts on how Stanley Magic Doors can be installed on your present doors and speed materials handling . . . cut processing costs all through your plant. Send this coupon now.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

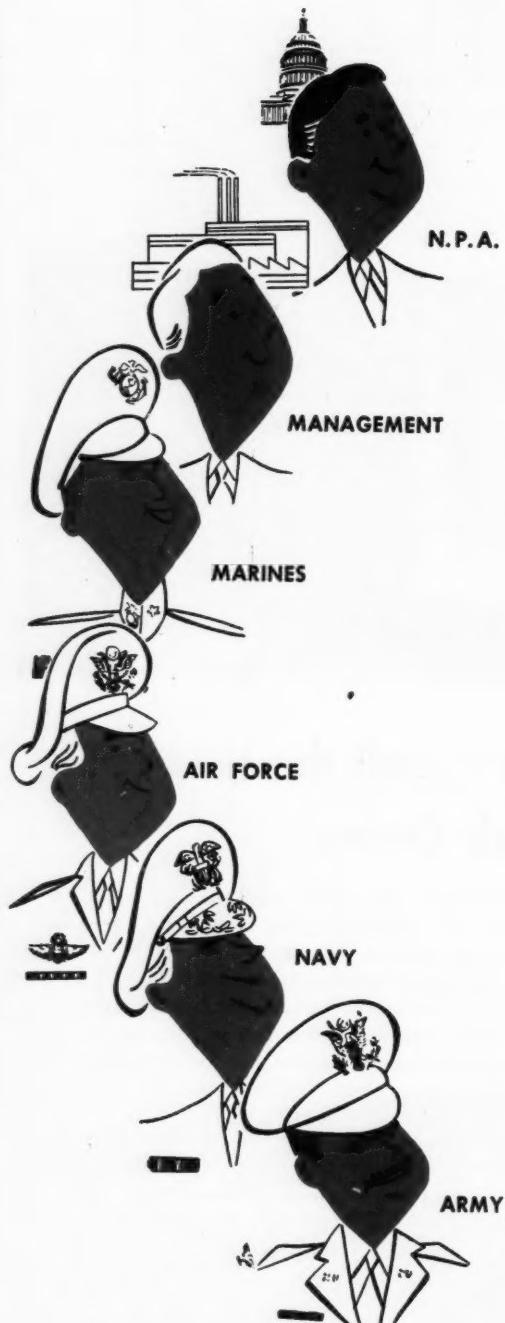


DOOR CONTROLS *"The Magic Door"*

COMPLETELY AUTOMATIC DOOR CONTROLS FOR SWINGING, SLIDING OR FOLDING DOORS

Circle No. 30 on Reader Service Card for more information

Material Handling



The Show

More Than 200 Exhibitors Will Display; Outside Space Will Be Used For The First Time; MHI Is the Sponsor

In just about a month, the doors of Chicago's Amphitheatre will be thrown open to the thousands who will flock to this year's Fourth National Material Handling Exposition. The old tagline "the greatest show on earth" is well suited to the 1951 edition which will be held April 30 to May 4th.

The present world situation makes this show of double importance to every plant operating executive. If this nation is to again produce vast quantities of critical war goods, material handling equipment is an important factor towards achieving these ends. Every type of material handling equipment—from tape dispensers to giant cranes—will be on display at the show.

More than 200 companies will use more than 10 acres of display space, nearly $\frac{1}{3}$ of which will be devoted to outdoor exhibits. This is the first time in the history of the show that outside space will be utilized and it will give manufacturers of yard handling equipment a chance to show their products under operating conditions.

The Exposition proper will be sponsored by The Material Handling Institute, Inc., and will be managed by Clapp & Poliak Inc., 341 Madison Ave., New York City. For additional information on the show, reservations, or other details, write Clapp & Poliak. The show will truly be outstanding and every plant operating executive owes it to himself and his firm to attend.

Marches On Chicago — April 30-May 4

The Conference

Rear Admiral Ring to Discuss "Military Importance of Material Handling" as Part of Conference Program

Fifty-eight of the nation's top experts on material handling will address the conference sessions held concurrently with the show. The conference will be sponsored by the American Material Handling Society. One of the featured speakers will be Rear Admiral M. L. Ring, S.C., U.S.N., director of supply management, Munitions Board, Washington. He will discuss "The Military Importance of Material Handling" at the conference luncheon on May 2.

The conference sessions will have direct application to many specific industries. These include: paper, paints, varnishes, solvents, oil, chemicals, foods, automobiles, coal, sand, gravel, ore, ashes, steel, grains, fruits, vegetables, sugar, food processing, cosmetics, textiles, and many many more. Altogether, almost 50 different industries will be covered.

Conference sessions will include talks, panels, forums, demonstrations with live models, demonstrations with working equipment, and dramatizations with live casts.

Among the subjects covered will be: bulk handling and storage methods, unit loading and packaging methods, how to make surveys, analyses and studies, process and production handling methods, distribution and warehousing methods, yard handling, and shipping and receiving methods.

FLOW'S Show Issue

The May Issue Will Include Interviews With Top Washington Officials on Material Handling and Packaging

Is your plant a "War Ready Plant"? Are you handling goods in the most efficient way possible? Do you know the "ins" and "outs" of bidding for contracts, getting "DO" ratings, communicating with the government? Do you know the ways handling equipment can help you during times of conversion? These and many other questions will be answered in FLOW's May issue—its "War Ready Plant Issue."

Here are only a few of the subjects to be covered: interviews with Col. Walter Mearls and Col. John Way of the Munitions Board (we'll guarantee you'll find the answers to the questions you've been asking); details of the packaging and training course at the Rossford Ordnance Depot; how the Cadillac Tank Plant uses handling equipment in converting to war production; new methods of carloading and shipping which slash demurrage costs, free much needed rail cars.

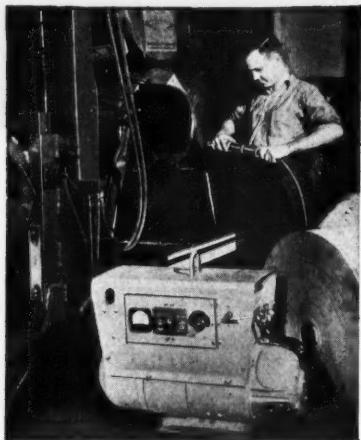
And here are more ways in which you'll benefit from the May issue. Advance registration cards will be bound into this issue, which will save you valuable time when you get to the show. Manufacturers of specific types of equipment will be indexed according to their products to aid you in finding their booth or writing for the information you want.

Don't miss the greatest issue FLOW has ever published. It will reach you early so you can have it before you leave for the show. Stop in and see us at booths 103 and 419.

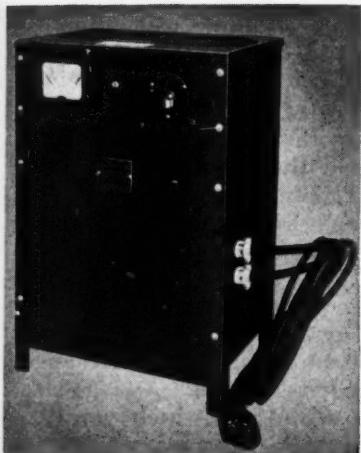
ONE G-E CHARGER SERVICES



G-E ROTATING-TYPE CHARGER. Versatility that allows complete freedom of choice of trucks and batteries is one of the principal features of this new wide-range G-E charger. For use on driver-ride truck batteries of lead-acid or nickel-iron-alkaline type, the unit is fully automatic and easy to operate. It has all the necessary protective features to prevent overload, reverse current, and unauthorized tampering. Because it is lightweight and compact the charger can be mounted on balconies or other supporting surface, or it can be stacked in tiers. This charger is designed for long life and easy servicing.



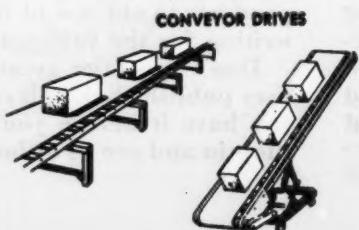
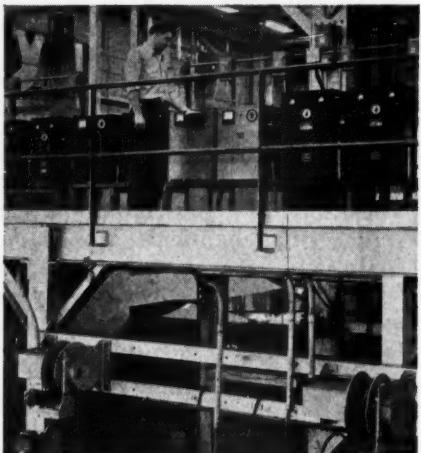
For operation, the battery man need only plug in the charger, set the timer, and the automatic control does the rest. Correct charging characteristics for each battery are designed into the unit. When the battery is fully charged the unit shuts down automatically. Correctly tapered charging is accomplished without resistors. When heavy transportation schedules make booster charges necessary, the charger can be set for manual operation.



G-E RECTIFIER-TYPE CHARGERS. A record of long continuous life stands behind G-E rectifiers for charging driver-ride or driver-lead electric-truck batteries. These units give a fully automatic charge to lead-acid or nickel-alkaline batteries and have "built-in" protection. They are easily installed and can be moved to meet changing needs, making possible "on-the-spot" charging. Versatility for charging different types and sizes of batteries is achieved by a few simple adjustments. Maintenance is limited to an occasional cleaning of the stacks.



Typical of the convenient installation of G-E rectifier-type chargers is this balcony arrangement with the leads available below. Mounted on overhead balcony, no floor space is wasted. Trucks are driven to this location and the leads on the reels shown at the bottom of the illustration are connected to the batteries for charging.



CONVEYOR DRIVES



CRANE DRIVES

ANY TYPE BATTERY

Proper charging cycles for all your truck batteries are available from either rotating- or rectifier-type chargers

No longer does a variety of truck batteries demand a variety of charging equipment. Either General Electric single-circuit battery charger shown at the left accommodates any size lead-acid or nickel-alkaline battery. And all G-E chargers are backed by years of design-engineering experience in the field of motors, generators, and rectifiers.

General Electric can supply reliable proved-in-service industrial-truck battery-charging units to meet any requirements. Available through your electric-truck agent. Your G-E representative can

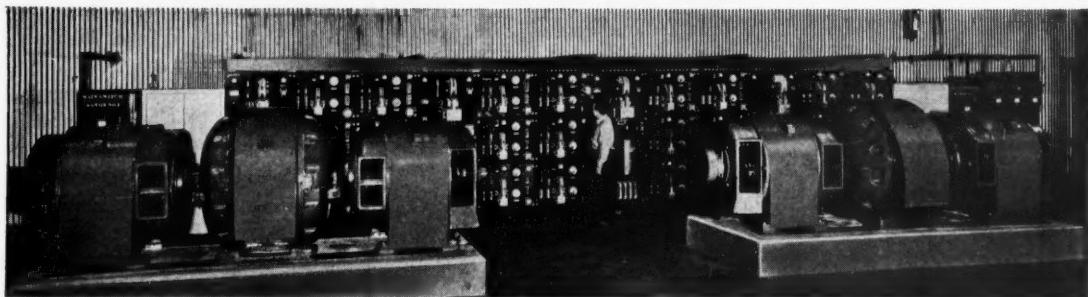
supply you with additional information. General Electric Company, Schenectady 5, N. Y.

SEE the latest techniques and equipment in this new film



As a service to industry, General Electric has produced an unbiased, authoritative movie* covering in detail the latest techniques and equipment in materials handling. Your equipment supplier or G-E representative will make this film available to you and your staff—with cost or obligation.

*Part of G.E.'s MORE POWER TO AMERICA program; film is titled "Materials Handling—In Receiving, Warehousing, and Shipping."



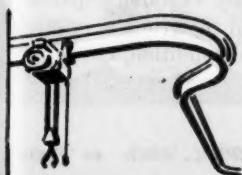
G-E MULTIPLE-CIRCUIT EQUIPMENT. Where large fleets of electric trucks are used, G-E custom-built multiple-circuit charging equipment, either motor-generator or rectifier-type, will handle lead-acid or nickel-iron-alkaline batteries singly or in multiple. This installation

shows two motor-generator sets each designed to charge 12 sets of 30-cell, 1500-amp-hr batteries. With multiple-circuit equipment like that shown above the m-g set can be remotely located and the control panel placed where charging is actually performed.

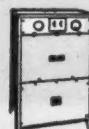
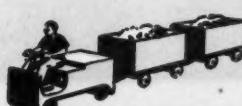
GENERAL ELECTRIC

669-1

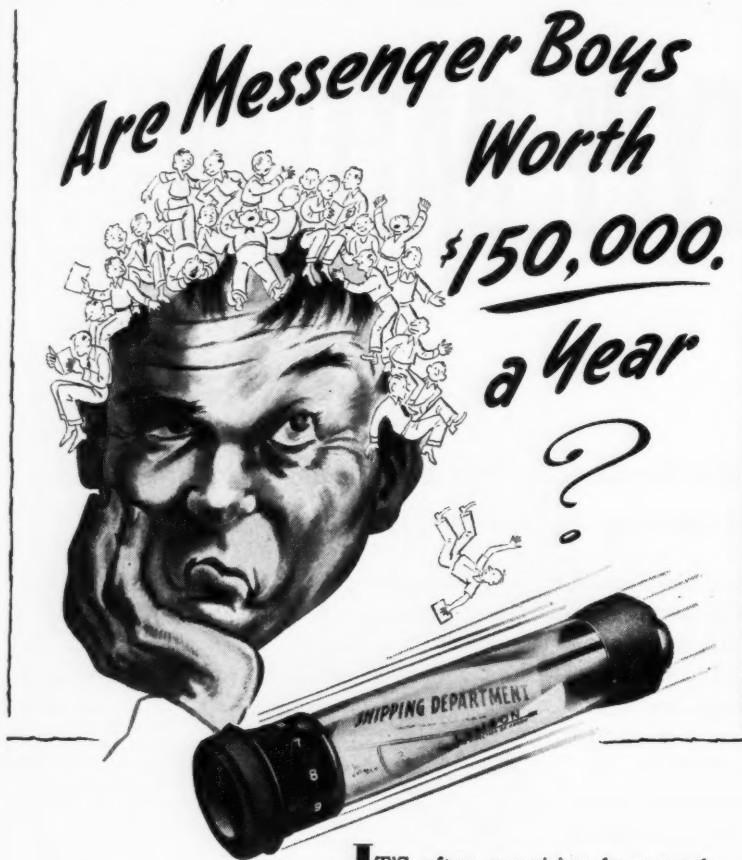
HOIST DRIVES



INDUSTRIAL TRUCK DRIVES & BATTERY CHARGERS



Association and Society News



IT'S often surprising how much Lamson Pneumatic Tubes slash operational costs while speeding the flow of paper work. For example, an aircraft plant installed a Lamson Tube System and saved \$150,000 annually in speeding orders, blueprints, mail, telegrams and requisitions.

A few nationally-known companies using Lamson Tubes:

American Can Company
Bethlehem Steel Corporation
Bucyrus-Erie Company
The Corborundum Company
E. I. DuPont DeNemours & Co., Inc.
Douglas Aircraft Co., Inc.
General Electric Company
Hammermill Paper Company
International Business Machines Corp.
Johnson & Johnson
Pillsbury Mills Inc.

Lamson Tubes save costly, needless steps in plants and business offices. They coordinate the flow of production papers with the flow of materials . . . whisk confidential data, even small tools, to the proper desk or station. In steel mills they're used to rush hot samples to the laboratory for quick analysis.

A Lamson Field Engineer will be glad to discuss this expediting service with you and your staff . . . no obligation, of course. Write or wire us today.

Write for free booklet—"Wings of Business." Shows how Lamson Tubes save time, cut costs in all businesses.

LAMSON CORPORATION

SYRACUSE 1, N. Y.

Offices in Principal Cities



Latest material handling methods will be demonstrated to a group of accountants by the showing on March 6 of four special films arranged by the New York Chapter of the National Association of Cost. The movie showing will familiarize the accountants with materials handling to prepare them for a discussion of cost control in warehousing operations in which the group will take part on March 13.

A. L. Whiton was elected president of the Wirebound Box Manufacturers Association at the association's recent New Orleans meeting. He succeeds Norris W. Embry, who was named vice-president.

The Philadelphia group of the Society of Industrial Packaging and Materials Handling Engineers held a meeting last month at Philadelphia's Benjamin Franklin Hotel. H. T. Holbrook of the Standard Cap and Seal Corporation addressed the group on the subject, "Industry's View of Military Packaging."

W. B. McClelland spoke to the Cleveland Chapter of the American Material Handling Society last month on the subject, "Factors Involved When Selecting Materials Handling Method." The chapter's March meeting will feature a maintenance forum on material handling equipment.

In a report to the Board of Directors of the Society of Industrial Packaging and Materials Handling Engineers, Managing Director C. J. Carney, Jr., said that the Society was in the best position in its history. Membership is at an all-time high, new chapters are being formed as fast as sound expansion warrants and the group is in excellent financial condition, Carney reported.

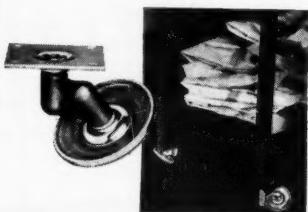


Caster Quiz

A "quick facts" feature with helpful suggestions on the use of casters...to reduce materials-handling costs, the "Reducible 30%"*

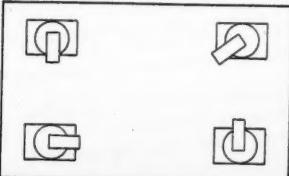
Q. How can light, portable equipment roll easier on rough floors or over obstacles?

A. On the amazing new Bassick "Flying Saucer" Caster. Its saucer-like 3" wheel, set at a 45° angle, rides over rough spots and obstacles equal to an ordinary wheel twice the size...with the extra asset of low overall height that cuts tipping danger. Low-cost. Ideal for shirt racks (below), shoe racks, garage equipment, etc.



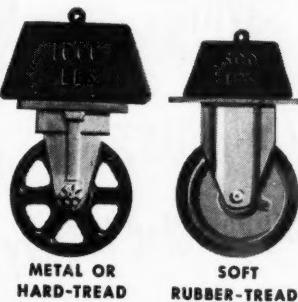
Q. When should only swivel casters be used on trucks?

A. For limited or confined areas where equipment must frequently move sideways to machines, bins, etc. This arrangement is not advised for long, straight travel, where a combination of swivel and rigid casters should be used for steering control.



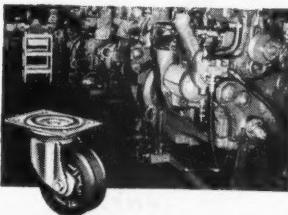
Q. Should metal and rubber-tread wheels of equal size carry equal loads?

A. No. Figure that soft rubber-tread wheels should carry about 50% of the load carried by metal or hard-tread composition wheels of equal size.



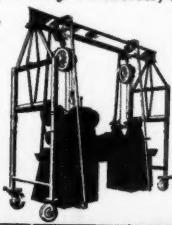
Q. Is there a simple way to set up a controlled-motion, easy-rolling assembly line?

A. Use Bassick Grooved-Wheel Casters on angle iron track, as Cummins Engine Company, Inc., successfully does in assembling its diesel engines. This low-cost scheme gives controlled flow, easy movement, great flexibility. Track is easily installed, self-cleaning.



Q. What's an easy way to raise and move heavy equipment?

A. A portable A-frame, on Bassick Casters, supports hoists, and can be moved throughout the plant to carry engines, heavy machine parts, etc. Bassick Heavy-Duty Casters (sizes for loads up to 10,000 lbs. or more per caster) add flexibility, in any direction, at any time.



WHAT'S YOUR MATERIALS-HANDLING PROBLEM?

We'll be glad to show you how Bassick Casters can help solve it, or to hear how you've used casters to deal successfully with a particular difficulty. We'll pay \$25.00 for any problem or case history that can be used in this advertising. Address the world's largest manufacturer of casters and floor protection equipment . . . THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. In Canada: Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

*According to cost analysts, materials-handling (about 30% of total cost) affords about the only real opportunities for cost reduction today.

Bassick

Making more kinds of Casters
... Making Casters do more

SEE OUR
CATALOG IN
SWEET'S

Circle No. 33 on Reader Service Card for more information

Industrial truck users— you get

20% more power capacity

35% longer work-life

20% per-ton savings

AT NO EXTRA COST

from a C&D Aircool Slyver-Clad battery

HERE'S WHY:

Five-Fold *Slyver-Clad* insulation and retention (a C & D development) holds active material permanently in place on the heavy-duty positive plate, thus reducing sediment deposit to a minimum. Because there's less sediment, less sediment space is needed at the base of each cell. C & D utilizes this saved space by making the battery plates extra-long.

In actual user-results, these longer *Slyver-Clad* plates give an Aircool battery 20% more power capacity, 35% longer work-life, a 20%-per-ton saving—at no extra cost! There are many other dollars and cents advantages to C & D Aircool *Slyver-Clad* batteries—good reasons why you should "replace with C & D!" You can get the complete story by mailing the coupon below.



BATTERIES, INC.

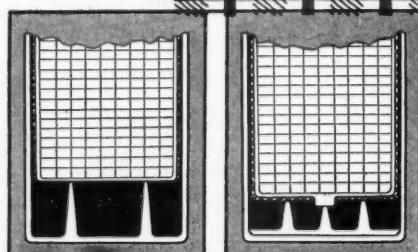
OF CONSHOHOCKEN, PA.
In Metropolitan Philadelphia

SALES AND SERVICE IN PRINCIPAL CITIES

See us at Booth #444

at the

Materials Handling Exposition



COMPARE THEM! At left: an ordinary battery with large, unproductive sediment space and integrally molded supporting ribs. At right: a C & D Slyver-Clad showing longer, power-producing plates. Separate rib plate in new double bottom design distributes battery weight evenly over jar base. Negative plates rest on separate center rib.

I'm interested in knowing how C & D Aircool *Slyver-Clad* batteries can help me cut my handling costs.

Please send literature Have your representative call on me .

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

Circle No. 34 on Reader Service Card for more information



Circle No. 110 on Reader Card for info. on this equipment

1000-LB. FORK TRUCK cut handling time by 50%; closer stacking increased available storage space by over 10%.



Circle No. 111 on Reader Card for info. on this equipment

400 TO 600-LB. CARTONS of finished yarn and 1000-lb. bales of waste are loaded onto a highway carrier by fork truck.

Attention small plants: only one piece of equipment

Improved Textile Handling Four Ways

It's a known fact that very small plants benefit from material handling equipment—in fact many times only one piece of equipment can do the job. Want proof? Well, the Green River Mills, Inc., Tuxedo, N.C. purchased a light-weight fork truck and obtained these benefits: 1. handling time halved; 2. available storage space increased by more than 10 per cent; 3. accidents caused by manual handling eliminated; 4. strenuous lifting done away with.

Here's what the fork truck does for this textile plant. A considerable quantity of raw cotton is needed in the manufacture of natural, mercerized and bleached yarn for the weaving, knitting and thread trades. In an eight-hour period the truck moves about 200 bales of raw cotton to production storage—

twice as many as was formerly handled in the same period with strictly manual methods. Bales range in weight from 400 to 700 lb. each—which gives an idea of the tussling men used to do, plus the accidents which resulted.

The truck also loads highway vehicles with the completed yarn which is shipped in 20 to 400-lb. cartons. Another duty: loading outgoing 500 to 1000-lb. bales of waste.

No, material handling is not the exclusive property of large plants. Whether your operations demand a hundred fork trucks or only one, as this plant has, there are dollars to be gained through the use of material handling equipment. And your plant will be a better place to work, too.

Maintenance and Safety Notebook

Six Operating Executives Talk On:

Preventive Maintenance

Take a look at these vital subjects:

- 1. Equipment Overloading
- 2. Floor Conditions
- 3. Tire Replacements
- 4. Equipment Breakdowns
- 5. Operator Training
- 6. Putting New Equipment In Service
- 7. Mechanical Maintenance
- 8. Paperwork and Maintenance
- 9. Unusual Conditions
- 10. What About General Overhauls

On February 19, 1951, the Pittsburgh Chapter of the American Material Handling Society conducted a forum on the subject of preventive maintenance of material handling equipment. More than 200 people crowded the ballroom of the Roosevelt Hotel to hear this vital discussion. Bill Wheeler, Editor and Publisher of FLOW was the moderator and the panel included such outstanding men as: Clark B. Risler of the Westinghouse Electric Corp., Pittsburgh; Jess W. Eyler from the Westinghouse Air Brake Co., Pittsburgh; L. W. Linsley, manager, president and Ex Officio of Materials Handling, Inc., Pittsburgh; A. C. Moore, district manager, C. & D. Batteries, Inc., Pittsburgh; L. Russell Astie, Jones & Laughlin Steel Corp., Pittsburgh; and Frank Wier, Timken Roller Bearing Co., Canton, Ohio. The discussion, which lasted well over two hours, went something like this. (Because of the length of the meeting, it is necessary to present only a portion of the topics covered—ED.)

MODERATOR: Does overloading affect the life of equipment?

MR. ASTIE: In many cases, it really decreases the availability by a very large percentage.

MODERATOR: I think you're right. Well, does overloading usually affect safe operation of the equipment?



Frank Wier

MR. WIER: You are definitely going to get into trouble, on the safety angle, almost from any kind of an overloading. Let's take the fork truck. When you overload it you lose the ability to steer with any degree of certainty.put a full load on a lift truck and then hoist that load and tilt your fork forward and it will go over on its nose because the safety angle; the safety load is relative to the higher mast standing.



Clark Risler

MR. RISLER: The same thing, only on a larger scale, is the cranes used around shipyards. There were numerous cases during the war when they had trouble there. The load was lifted at the modus radus but in going out it reached a further extremity and it gets past the limitation and down it goes.

Maintenance and Safety Notebook

and Handling Equipment

MODERATOR: Another question: does money saved by the purchase of over-rated equipment or equipment too light for the job, help in reducing production costs?



Jess Eyer

MR. EYLER: We often talk about buying equipment too light for the job. Then when an accident occurs, we run out and buy a heavier piece. One accident can pay the difference from the low capacity equipment and the proper equipment for the job.

MODERATOR: I think in summing that point up we

can say that overloading in some cases, in emergency perhaps, it is permissible but if available, you should stay within the capacity limit and specifications of the manufacturer and except in emergency cases, never overload the equipment.

MODERATOR: Now, another important question. Which do you suppose does the most harm to equipment, projections in the floor or recesses in the floor, such as holes?

MR. LINSLEY: Holes, no question about it.

MR. ASTIE: How about on tires?

MR. LINSLEY: Your holes will be worse on tires
than any recesses or pro-
jections would be.



A. C. Moore

ing the hills etc. I am sure that would apply to the

same material handling equipment.



L. W. Linsley

MR. LINSLEY: I say it is better to pay for the higher cost of equipment to put bigger motors and enable them to do a better job.

L. W. Linsley **MODERATOR:** What types
of flooring then is the most
beneficial to equipment and maintenance of tire life?

MR. ASTIE: That's a tough thing to say. Oftentimes, the cheapest type of flooring might not hold up



I P Action

less expensive flooring could have done the job just as well. I can only suggest, that each plant must decide on the hardness of flooring according to the wear it will receive.

MODERATOR: When should tires be replaced for proper tires for the job?

MR. ASTIE: That's easy. If you have tires on a piece of equipment that are designed for one purpose and you plan to use that equipment for another purpose, then you'd better get those tires off before the equipment is ever used.

MR. EYLER: Which is better to use, rubber or steel wheels?

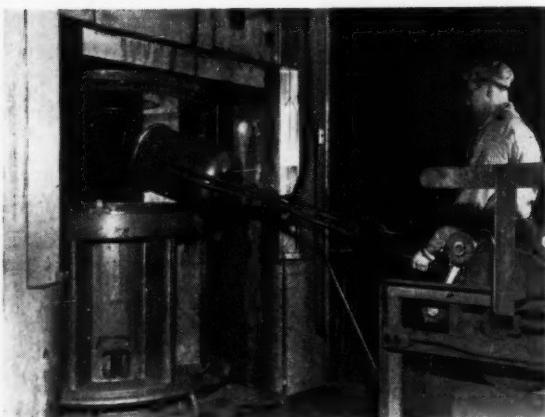
(Continued on page 50)

COST CUTTING BRIEFS . . .



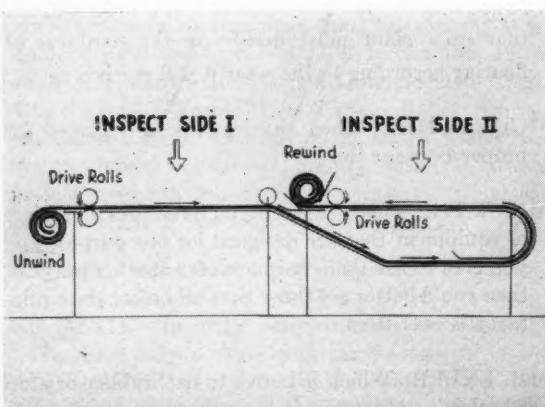
Circle No. 112 on Reader Card for info. on this equipment.

DE-AERATED BAGS give J. M. Huber Corporation, New York City, more pay load and less waste space in its shipments of bulk materials to Huber customers. Huber figures it saves about 12 cubic feet per ton by flattening the bags between roller belts before shipping. Same time, customers have an easier time handling and stacking the bags. De-aerating gives a better seal by tightly closing the big valves, too. Weak bags are rejected—they pop when pressure is applied.



Circle No. 113 on Reader Card for info. on this equipment.

PNEUMATIC TONGS take the strain out of handling heavy drawings at Scarfe Co., Oakmont, Pa. Hooked to a chain suspended from the ceiling, the tongs are guided by an operator whose job is to take the stampings from the die and place them on the conveyor in back of him. Pneumatic power does the clamping after he has put the tongs around the part.



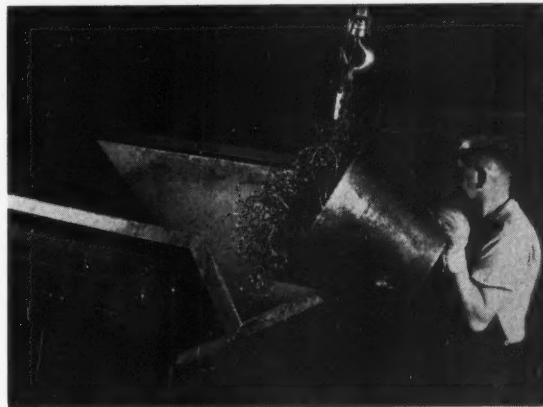
Circle No. 114 on Reader Card for info. on this equipment.

INSPECTION TIME of its strip metal coils has been cut 25% by Riverside Metal Company, Riverside, New Jersey. A re-designed inspection did the trick. The old way took 5 steps: unwinding coils; inspecting one side; rewinding coils; unwinding again; inspecting other side. Now by guiding the strips between drive rolls, both sides are inspected in one operation. Riverside's idea could be adapted to almost any textile, paper, rubber or other strip-material inspection.



**COST CUTTING
BRIEFS . . .**

HOISTS AND HOPPERS team up at the Buffalo plant of the Westinghouse Electric Corporation to make scrap handling faster and easier. Scrap in buckets is lifted off tote pan pullers or skids, dumped into centrifuges that whirl the oil out of it. When the scrap is dry, it is hoisted out and dumped into nearby self-dumping hoppers. Fork trucks take the hoppers to gondola cars.



Circle No. 115 on Reader Card for info. on this equipment.

CLOTH TAPE speeds up the bundling of wooden window sashes at R. O. W. Distributors, Rocky Mount, Virginia. Shipped in bundles of twelve, the sashes are taped instead of being tied with rope. Rope takes longer, loosens up after a little travel, the company found. The tape sticks tight on contact, keeps the bundle tight through the roughest trip and doesn't mar or discolor the wood. Different-colored tape identifies orders so similar that workers might confuse them.

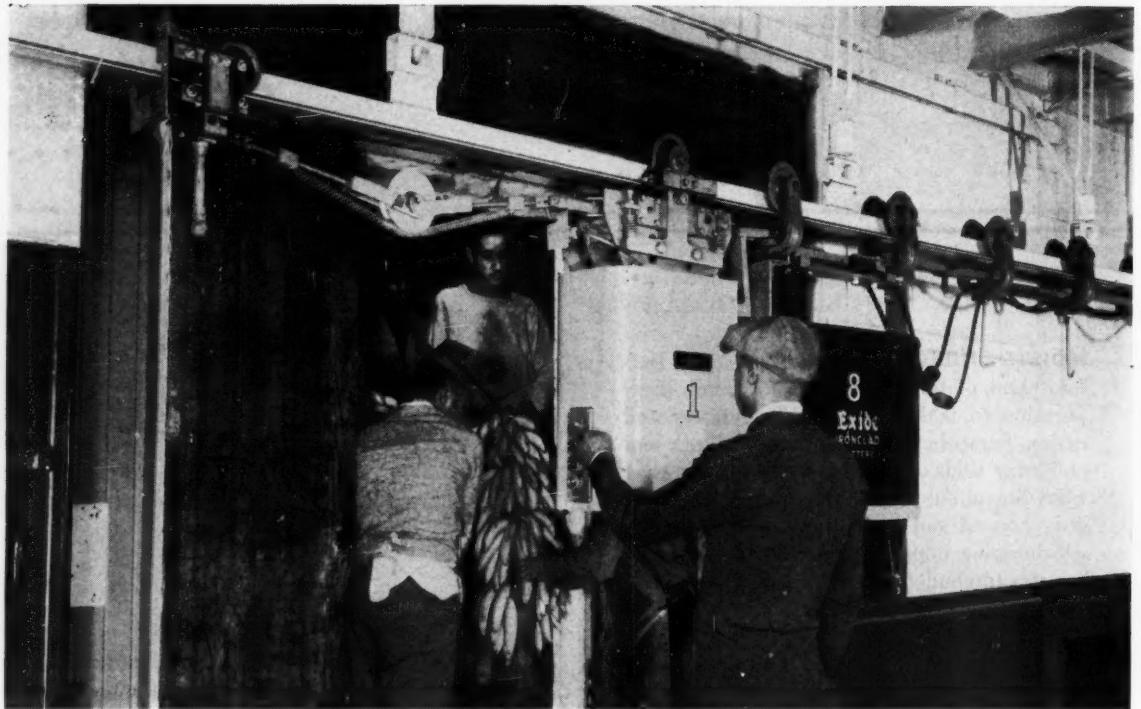


Circle No. 116 on Reader Card for info. on this equipment.

TROLLEY SLIDES that send small parts gliding right into position before these operators at Sangamo Electric Company, Springfield, Illinois, are helping Sangamo keep up with its production schedules. Rails built into the trolleys keep the parts centered and correctly positioned all the way down the line. The girl at each work station gets her parts all ready to work on without any juggling or re-positioning. At the end of the line, specially sectioned trays hold completed parts in perfect order, ready to be carted away.



Circle No. 117 on Reader Card for info. on this equipment.



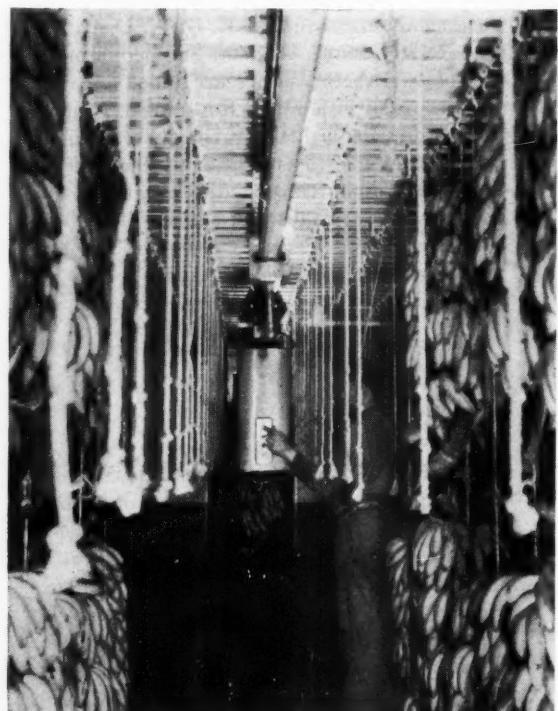
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1. **THE "SLOW BUTTON"** is pushed as the battery-powered train approaches the rail car
At this station, the . . .



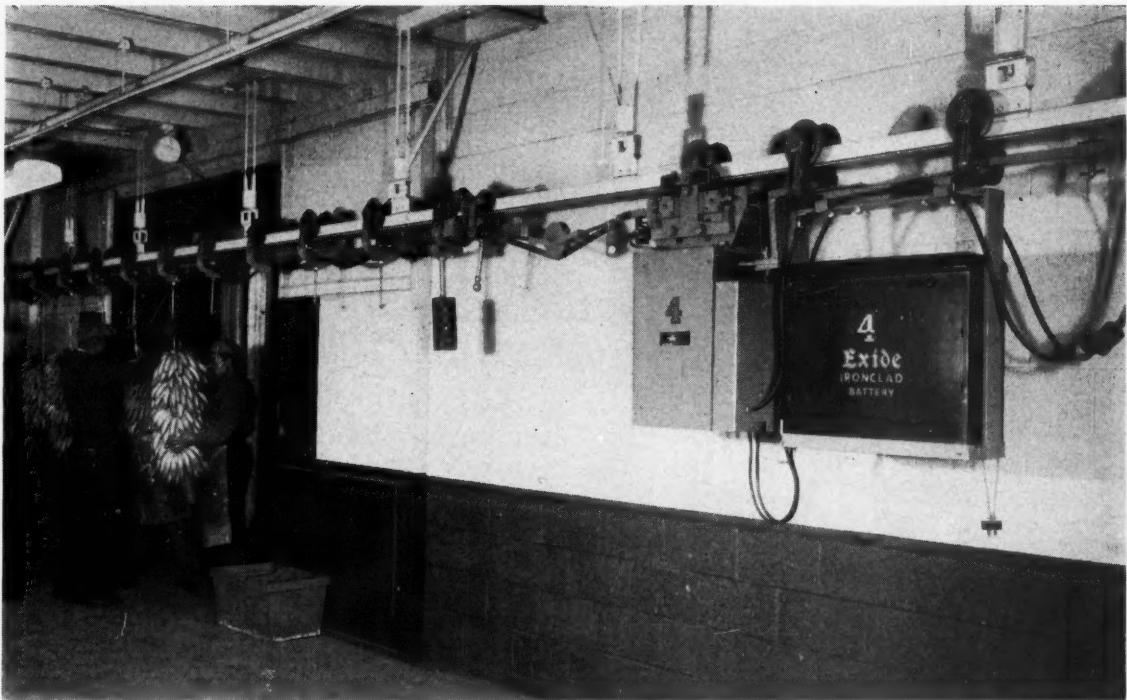
Circle No. 119 on Reader Card for more info. on this equip.

3. **SPEEDS DOWN THE MONORAIL** to curing.
The trains are shunted via monorail switches.
In the curing rooms . . .



Circle No. 120 on Reader Card for more info. on this equip.

4. **AN OPERATOR** presses the "slow button" and
stalks are removed. Controls are located at
each end of the train for operating ease.



Circle No. 121 on Reader Card for more info. on this equipment

- 2. STALKS OF BANANAS** are hung on the hooks of the load carriers. The "fast button" is pushed and the train . . .

The First Time Anywhere --

Battery-Powered Monorail System

Badalement, Inc., Detroit, a wholesale distributor of bananas, has installed a new and unusual piece of equipment for moving these stalks of fruit from rail cars to curing rooms. The problem: how to select an overhead handling system whose carriers operate independently of each other and which is so powered, that it will not endanger operators standing on wet floors. The solution: A monorail system with individually controlled battery-powered carriers.

MECHANICALLY SPEAKING

This monorail system, with each train powered with a self-contained unit, is applicable to any industry where it is desirable to have individual trains operating independently of every other unit in the system.

The Safety Device: to prevent "crack-ups," an antenna safety device is a long arm, hinged in the middle and located directly ahead of the drive unit. When a fast moving train overtakes a slow moving train, the antenna retracts downward and allows sufficient over-

travel. The overtaking train stops generally within several inches. As the train ahead continues at slow speed, the antenna arms gradually extend to normal position, the micro-switch in the unit is again closed, and the train resumes its travel at slow speed.

Self-Contained Power Feature: the power unit travels with each train. The train is powered by a battery of suitable capacity or by an electric generating unit powered by any means such as gasoline, bottled gas, crude oil, compressed oil, etc. The drive unit and power unit are separate and can be quickly and easily detached.

The Traction Unit: this is propelled by two rubber-tired drive wheels which receive their power from an electric motor through a suitable speed reduction power transmission arrangement.

The Control System For Electric Motors: this may range from a very simple forward-off-reverse switch to very complicated push button or even radio-activated controls; it is carried along with the traction unit.



Circle No. 122 on Reader Card for info. on this equipment.

200-300 LB. DIES can be spotted without effort when the hoist does the work.

Hoist Spots 300-lb. Dies On Press

When the General Welding Corporation, Cleveland, installed a 12-ft. brake press a few months ago, it ran head on into a tough handling problem: the press' heavy (200-300 lb.) dies had to be lifted and tussled with by shop workers.

Aside from the danger of strains and accidents, this hand-handling was taking men from their jobs several times a day to help with the struggle.

General's solution was a one-man push-button operation for setting and removing the female parts of the dies. A quarter-ton capacity electric hoist was installed on a trolley-mounted beam that rides on two overhead rails. A simple lifting attachment has a $5\frac{1}{8}$ -inch hole centered on the shorter female dies, drilled and tapped for attachment of a threaded ring bolt. The bolt is screwed into the die, and the hoist hook is

threaded through the ring. This simple device can be attached or removed in jig-time.

Because of the location of the holes in the bottom of the V-grooves, forming isn't affected. Longer dies get support from chain slings held by two ring bolts set in the "V" groove.

Upper die or punches are handled differently: two holes were drilled and tapped, 24 inches apart, at one side in the center of the dies for attachment of threaded rods. A lifting ring was welded near the threaded end. While the load is suspended from the hoist hook, the rods guide the dies into the ram.

If your production workers have to double as handling men, better take a look around your shop to see where properly installed hoists would save time and money.

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MH* FOR WAREHOUSES. In lifting and stacking heavy loads ceiling-high, Towmotor Mass Handling often doubles and triples storage capacity without increasing floor area.



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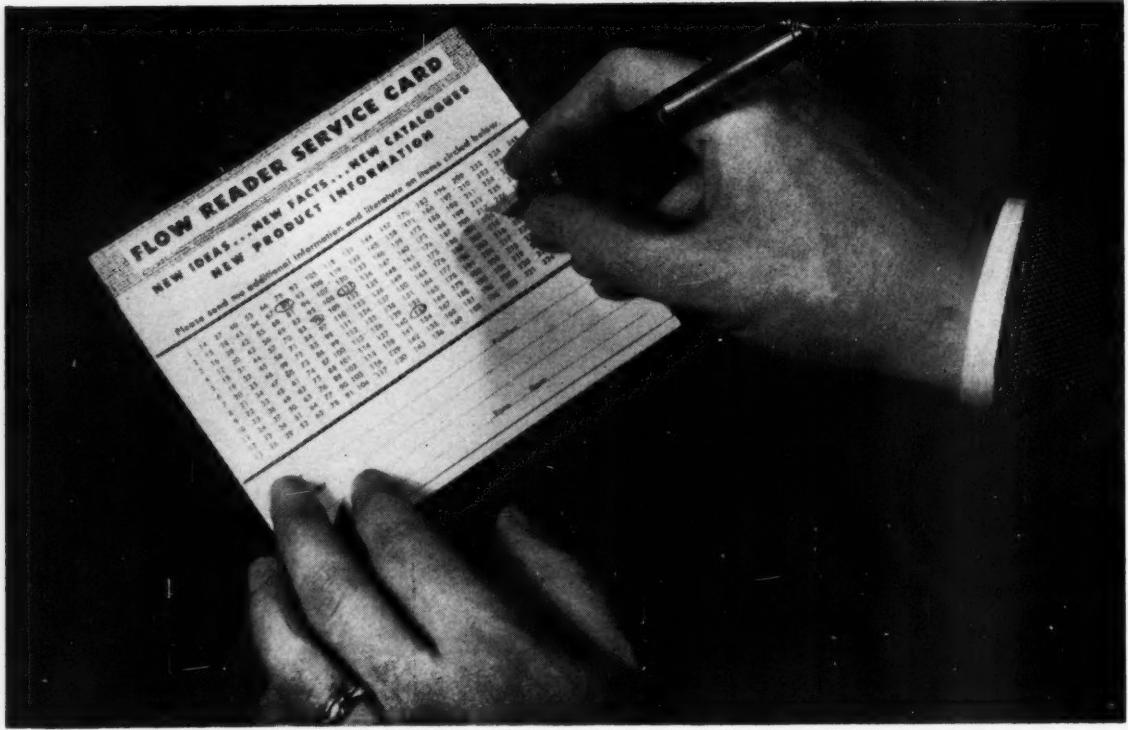
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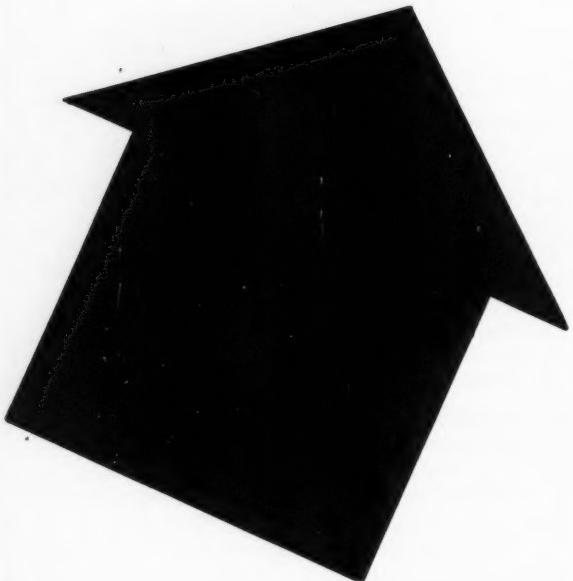
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ARE YOU THE MAN IN THIS PICTURE?



If the man in the picture above could be you, don't read further. But if you don't take advantage of the 200 offers of free information about equipment pictured and described each month in FLOW, take a minute and read on.

From the letters we receive each day, we know that thousands of readers use FLOW as an important tool on their jobs. There are two important ways you can use this tool.

First, the methods described in each issue are designed to start you thinking about how you can adapt these methods in your own plant. The methods that have paid off for other companies can do the same for you. But that's only part of it.

Detailed information about the equipment which goes hand-in-hand with these methods is the second use of this vital tool called FLOW. To make it as easy for you as possible—because we know you are busy—we have numbered each advertisement and each editorial picture. In addition, each month we present more than 100 offers by manufacturers of their equipment and services.

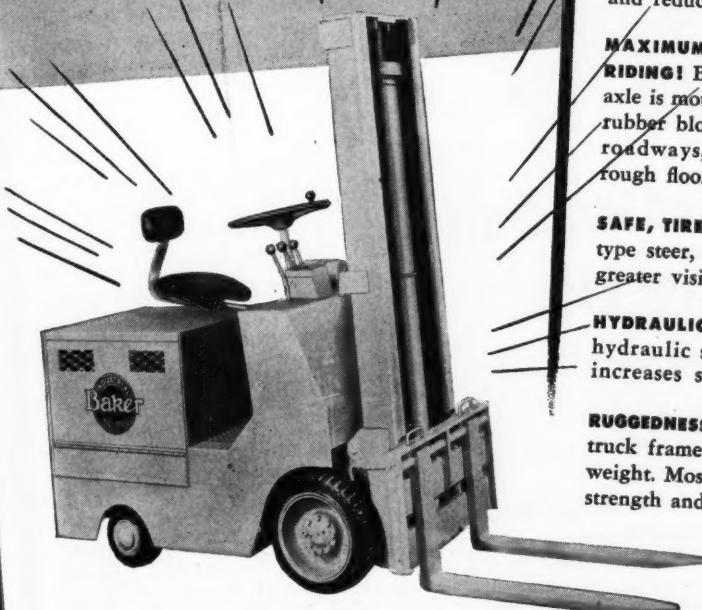
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FORK TRUCK combines OUTSTANDING
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Baker INDUSTRIAL TRUCKS

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HUNDREDS OF USERS AGREE THAT IT HAS MORE THAN LIVED UP TO OUR CLAIM!

Now Baker announces the *Type FS*, with the same completely functional design, in the 2,000 pound class. If you have a material handling problem for trucks in this capacity — it will pay you to get all the facts.

Write for Bulletin 1327

Compare These Features!

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Phone for your complete proof demonstration
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UNITED STATES RUBBER COMPANY

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Preventive Maintenance . . .

(Continued from page 41)

MR. RISLER: You can't pin that down to any specific duties. They both have their place. And it is the common belief that steel wheels will chew up flooring is not true. There are several types of flooring that will withstand steel wheels.

MODERATOR: The next category is equipment breakdowns. What can we do to prevent long and costly delays in the case of equipment breakdowns?

MR. ASTIE: When you are trying to get parts and you overlooked getting or having enough parts and you have a breakdown and you want to get the equipment back into service, you certainly wish that you had maintained a good stock of spares.

MODERATOR: How can breakdowns be foreseen?

MR. RISLER: Let's say it's system. That is part of the preventive maintenance program to have some sort of a regular inspection program. Accompanied by adequate records and by a study of records, you can see trends, and you can tell when a piece of equipment is about to give you serious trouble by the amount of maintenance it requires each time you inspect it or maintain it. So, the answer to that is adequate system of records to accompany a systematic program of inspection will anticipate breakdowns.

MODERATOR: Is there any direct connection between lubrication and breakdowns?

MR. WIER: Lubrication is something that has to be done properly, it can't be overdone or underdone but requires a great deal of care. I would say there is a definite connection between lubrication and breakdowns.

MODERATOR: Well then, what are the most important maintenance factors in obtaining maximum life, assured capacity and a trouble-free operation for industrial truck batteries?

MR. MOORE: There are three

factors which are all-important. They are watering a battery correctly, charging of equipment and cleaning. These are equally important and failure in any one will surely limit the life of your batteries.

AUDIENCE: I would like to know if the operator who is handling the equipment has anything to do with the breakdowns?

MR. WIER: If you are working a piece of equipment and have the same operator on it every day and you train him properly, he becomes qualified to use this piece of equipment and you will have little damage or breakdown. But take the same piece of equipment and use it on three turns a day, seven days a week, and you will have trouble all over the lot. It still doesn't solve a three-turn. And we can't associate particular wear or damage to a particular man or shift.

Moderator: Can we get onto another important question. What is the best method for placing new industrial trucks in operation?

MR. EYLER: I think we have found that with the cooperation of the manufacturers to send a service engineer, to have a service engineer visit the plant when the equipment is received and give a thorough checking and call all the maintenance points to your own mechanics' attention. At the same time they can instruct operators about anything that may be different from other trucks in your plant. We also have our mechanics go over all new equipment and service it completely before placing it into service.

Moderator: That leads to still something else. What are operator's preventive maintenance responsibilities on electric and gas trucks or tractors?

MR. EYLER: The only responsibility you can give an electric truck operator is that he report all controls failures or any unit failures of the truck and if they should happen in operation, that

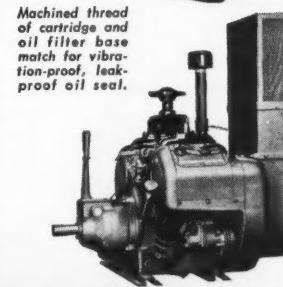
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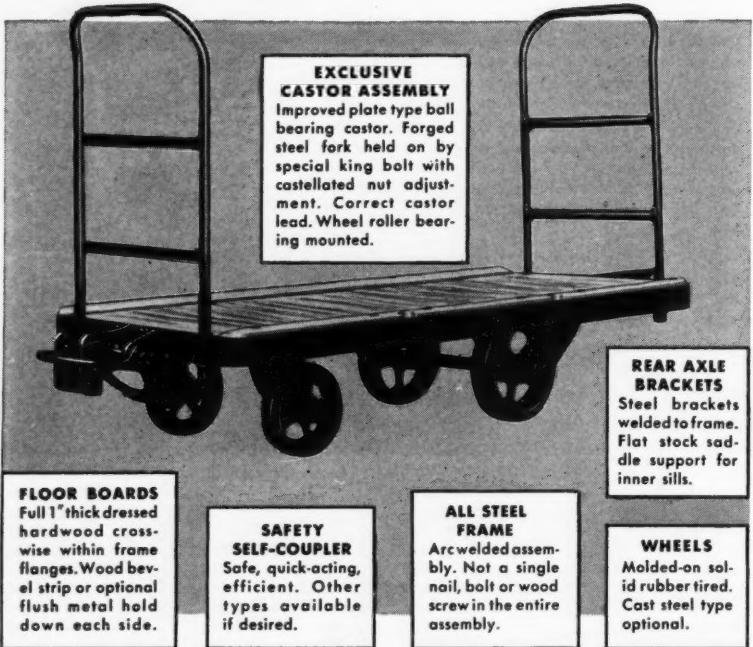
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he be given instructions not to attempt to bring that truck to the garage but to leave it there to be inspected by some authorized personnel or mechanic.

MR. LINSLEY: That is true of gasoline trucks too. In general, you have to depend on your operator to do a portion of your daily preventive maintenance. When you have no other equipment that requires maintenance and you have to depend on the operator, you are going to have to make your operators more conscious of your maintenance requirements on that piece of equipment.

MODERATOR: What about charging equipment and its effects on battery maintenance and what are discharge tests?

MR. MOORE: If the charging equipment isn't working correctly, your battery can go out on the job practically discharged and which naturally gives you a dead battery in four or five hours. Discharge tests are to me very important items. When we find that a battery is not doing the job we want done, we attach an ampere meter and a recorder that gives us the picture of how hard that man is working that truck.

MODERATOR: Just how does it work?

MR. MOORE: Well, you measure the ampere hour capacity that has been taken out of that battery and you also have a self-recorder service record which tells you how much movement you have. You have a complete picture of actual operation against the time the truck stands still.

MODERATOR: That's quite a system.

MR. MOORE: We can take it one step further. We find that when a man doesn't know how many batteries he will need for the coming year, we have found out that by running just such a discharge test to get the ampere hour capacity taken out by that man, we can set up what he is

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MODERATOR: Let me ask you men this: should a record of parts, labor, and costs be kept on each piece of equipment, no matter how small?

MR. RISLER: I would say all the plants, big and small, should have some positive method of record keeping. Of course, the system will have to be geared to the size and specific problems of the individual plant.

MODERATOR: There is one good question I have been saving for last. Is it best to send equipment to a commercial shop for general overhauling or have your plant maintenance department do the job?

MR. LINSLEY: I don't think it pays to send your trucks to a commercial shop to have dollars worth of work done. But if a major job has to be done, I think it is better to send them out. After all, in a commercial shop, operators who do nothing but that job can do it a lot faster. Also, they have all the parts that are needed to fix a truck—usually more than a plant would normally keep on hand.

MR. WIER: We don't send units out until we get work beyond the depth of our maintenance department.

MR. ASTIE: Of course this whole question depends a lot on the company and the size of its maintenance department.

MR. WIER: Certainly. Where parts and personnel can do the job in a plant, it is silly to send equipment out. But if a plant decides it is more economical to release its maintenance department for every-day work or if the department is not adequate to do the job, then of course far more economical and practical to send the equipment to an outside source.

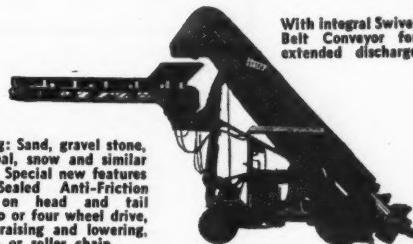
MODERATOR: I want to close the meeting, as far as the panel is concerned. I think it has been a very enjoyable and enlightening discussion. I hope you have liked it.

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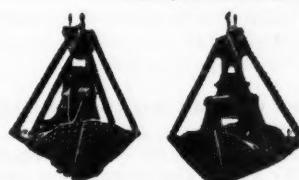
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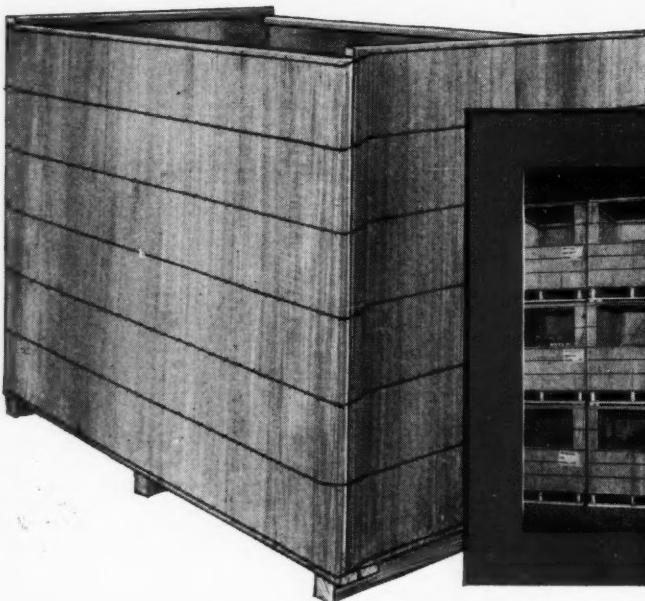
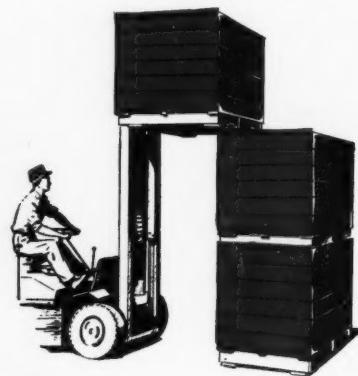
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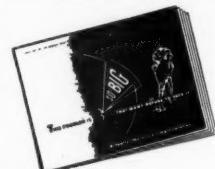
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PACKAGING MECHANICS SECTION

CONTENTS

Steelstrapping Methods for Bracing Cargo Shipments	56
If You Can't Use Pallets To Stack	60

WHAT YOU WILL FIND IN THE PACKAGING MECHANICS SECTION OF FLOW'S MAY "WAR READY PLANT" ISSUE

An Interview With Col. John A. Way

FLOW visited Washington for an interview with Col. John A. Way, Chief, Munitions Board Packaging Division. In this exclusive report, Col. Way tells how he and his division can be of aid to you men of industry. You will find to whom to direct your questions. You will also learn how, with your help, current packaging specifications can be altered.

Here are some of the other questions Col. Way will answer: "Where should Mr. Businessman go to obtain information on military packaging specifications;" "How can a manufacturer get information on how to package various types of products;" "What Military packaging schools are open to industry." These and other problems will be answered in this frank discussion.

You can't afford to miss this outstanding discussion with one of the Government's top packaging men. Be sure to look for it in next month's "War Ready Plant issue."

Details Of The Ordnance's Packaging Program & School

Interested in how the Ordnance Department packages parts for overseas shipments? Want to know the details of its Packaging Course which is available to industry?

In the last war, many critical parts arrived overseas in unusable condition. To correct this, the Military prescribes half a dozen packaging methods. These will be pictured and described in detail. While the parts discussed are automotive, the methods are applicable to any and all items which are subject to rust, corrosion, scratching or marring.

If you are interested in attending the packaging school at the Rossford Ordnance Depot in Toledo, you can get all the details. The course, which lasts two weeks, teaches cleaning, preserving, prepackaging, packing, inspection, shipping and carloading. In addition, it covers production control and specifications.



J. G. Bucuss,
Acme Steel Co.



H. M. Reed,
Gerrard Steel Strapping

44 Questions and Answers On:

Steel Strapping Methods For Bracing

If you are responsible for the shipping practices in your plant or if you influence decisions on methods and equipment used, the following outstanding report will be of vital importance to you. Here are 44 questions and answers on the subject of steel strapping methods for bracing carload shipments. Included are general methods plus specific advice on shipping a wide variety of different products.

This report is a result of a round-table discussion by members of leading steel strapping manufacturing firms at a recent meeting of the Midwest Material Handling Society, Chicago. The panel included: John G. Bucuss, Acme Steel Co. who presided and A. N. Perry, Signode Steel Strapping Co.; E. W. Bonekamp, Brainard Steel Co.; H. M. Reed, Gerrard Steel Strapping; G. E. O'Brien, The Stanley Works; and E. C. Evans, Acme Steel Co.

While the evening's discussions also included such topics as "Unitizing or Bundling For Shipment" and "Unitizing Products For Handling On Skids or Pallets," space does not permit reviewing these subjects in this issue. Look to future issues of FLOW for these interesting reports.

Q1. What is meant by the "floating load" method for bracing carload shipments?

A. In "floating load" shipments, the items stowed in each end of a railroad car are securely bound with steel strapping to form one single package or unit. The load becomes an independent mass unit of weight, free to shift on the car floor under impact. The degree of movement is governed by the amount of friction between the unit and the surface of the floor.

Q2. What is the so-called "controlled floating load"?

A. A "controlled floating load" is one which is snubbed in some manner to restrict excessive lengthwise movement of the strapped units. This is sometimes called a "controlled unit load."

Q3. What is an "anchored load"?

A. An "anchored load" is one in which steel strapping is secured to the car side walls, or side walls and floors, by anchor plates, to hold the load in a fixed position.

Q4. When more than two sets of anchored bands are used in one end of the car, why should the anchors be staggered on the car walls?

A. Staggering distributes the impact shocks at the points of anchorage over a greater number of car wall posts or studs in the car frame.

Q5. If the car bracing straps are loose at destination, does this mean that they have stretched?

A. No. It indicates a greater compression of the lading caused by transportation shocks. This often



E. C. Evans,
Acme Steel Co.



G. E. O'Brien,
The Stanley Works

For Bracing Carload Shipments

means that products were not properly and tightly stowed in the car prior to bracing.

Q6. Are freight rates of any value in determining the bracing method to be used?

A. Bracing carload shipments with steel strapping and thin dunnage can often save hundreds of pounds of dunnage on which freight must be paid.

Q7. What is dunnage?

A. Dunnage refers to any material used to brace products in or on a car.

Q8. Name some of the advantages and disadvantages of the various types of bracing methods.

A. In a solid load, or through load, the total cumulative shock of any coupling impact must be absorbed by the containers which contact the struck end of the car.

In a divided load, which is rigidly wood braced, one half of the total shock is absorbed by the containers which contact the struck end of the car. The other half of the shock is absorbed by the containers contacting the bulkhead, or gate, which confines the lading in the opposite end of the car. This is predicated on an equivalent load weight in each end of the car. Also keep in mind that any load tends to move toward the struck end of the car.

In an "anchored load" the shock absorbed by the containers at the struck end of the car is the same as in a divided load. Since the steel strapping confining the lading in the opposite end of the car is resilient, it absorbs much of the shock to the lading

in that end of the car. This reduces the amount of shock to the containers. A "floating load" is free to shift and come to a sliding stop. Repeated tests have proved that at least 50% of the shock is dissipated by the sliding friction of a "floating load". They are "riding with the punch".

Q9. What effects will a rough riding car have on the various methods of bracing?

A. A rough riding car causes the lading to oscillate. The severity of the oscillation depends upon train speed, track, wheel and spring conditions. Under some conditions the vertical oscillation is sufficient to bounce the lading clear of the car floor. This condition tends to loosen any wood bracing.

Q10. At the moment of a coupling impact, how does the center of the car react?

A. Tests made by carriers and strap manufacturers indicate that a severe upward vertical shock occurs as a result of end impacts. The intensity varies from 40 to 60% of the amount of the longitudinal shock.

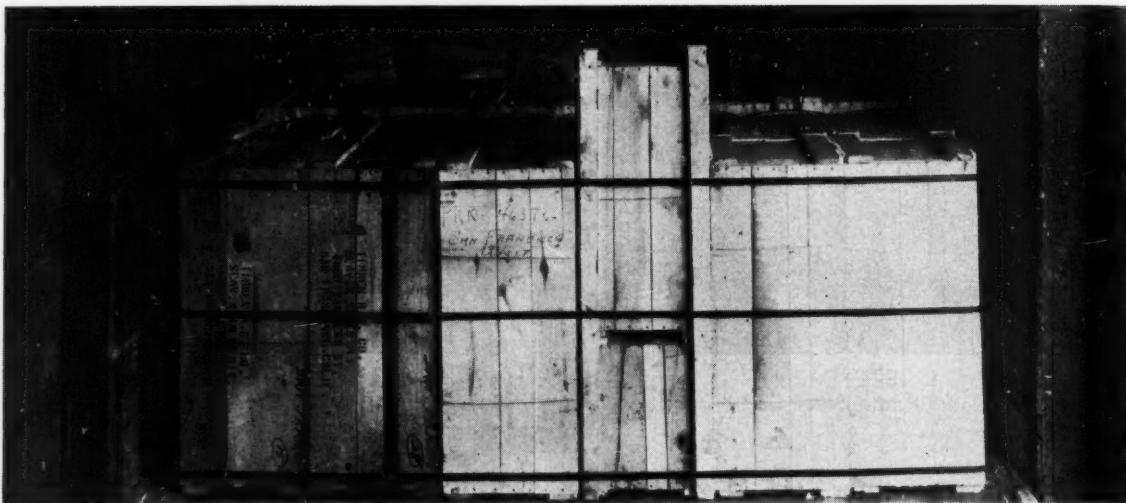
Q11. What effect does this have on the bracing?

A. The destructive tendencies are the same as in a rough riding car, but of a greater magnitude. However, these shocks have no material effect on the bracing if the lading is braced according to the "floating load" principle.

Q12. How can tilt be prevented in "floating loads"?

A. Tilt can be prevented by the use of diagonal strapping. The straps crossing the top and bottom of the

Here's an example of a "floating load" --



MIXED "FLOATING LOAD" is bound as a unit with steel strapping.

front and rear gates must be in a horizontal plane. However, these straps cross each other along the sides of the units. The top strap of the front gate is the bottom strap at the rear gate.

Q13. Which is preferred: a high floating load with a maximum amount of clear floor area, or a low floating load with a minimum amount of clear floor area?

A. Usually, container strength and circumstances permitting, a high load is preferred if it provides more room in which to shift.

Q14. Are there any devices available to restrict shifting of "floating loads"?

A. Yes. Mechanical snubbers which engage the strap, metal retarders, anti-skid plates and other steel devices are available.

Q15. Does shift mean there will be damage to the lading?

A. Definitely not. Before the "floating load" principle, splintered bracing damaged the lading whenever the load shifted. Shift became associated with damage as synonymous. However, shift in a properly strapped load usually means damage free arrival.

Q16. Why are guide rails required for loads of various products?

A. There are two reasons for guide rails:

- (a) To comply with Railroad safety rules, when the loads are not of sufficient width; and
- (b) To keep the units in alignment, and to prevent spreading of the units.

Q17. Why are gates specified for loads of barrels, drums, etc., which are braced with steel strapping?

A. Rigid crosswise members, at the front and rear of each unit serve several purposes, some of which are:

- (a) To provide better bearing for straps against containers;
- (b) To hold the load in better alignment; and
- (c) To prevent dislocation of strapping.

Q18. Are divisional gates necessary in a "floating load"?

A. They are necessary only when it is desirable to separate various types of containers.

Q19. Can a "floating load" be placed on top of a solid floor load?

A. Yes, if the top of the floor layer is sufficiently level for the "floating load", or if a false deck is provided.

Q20. Why do the strapping manufacturers suggest that anchors be placed at least three feet behind the face of the unit?

A. This takes advantage of the greater shock absorbing qualities of longer strands of steel strapping and avoids angular pull-away from the point of anchorage.

Q21. How can anchors be easily removed from car walls?

A. Tools are obtainable from strapping manufacturers to remove anchor plates from car walls and floors.

Q22. When making stop-over shipments in railroad cars, should each consignment be independently braced?

A. To provide maximum protection, the shipper should brace the lading adequately for each consignee, without depending upon the consignees to re-brace for subsequent stops.

Q23. If the front of the load does not come evenly across the car width, what can be done to prevent looseness within the load?

A. Any irregularity developing in the face of the load due to different container sizes, should be filled in with adequate blocking material or fillers. This affords complete bearing of gates to load and eliminates undue pressure being applied against any of the containers immediately adjacent to the gate.

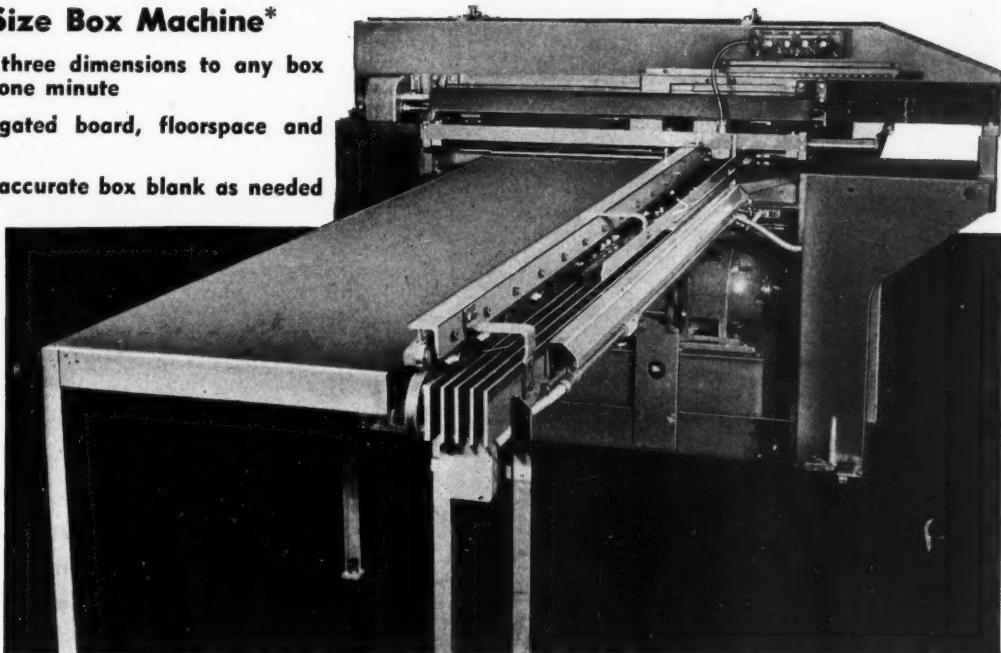
Q24. Can steel strapping be successfully used to prevent loaded fibre containers from falling into void

(Continued on page 62)

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* Pat. No. 2,533,419 Additional Patents Applied For

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HYDRAULICALLY ACTUATED device makes stacking easy when you can't use pallets. Its lifting arms can be adjusted for width to handle different-sized crates.

PACKAGING MECHANICS SECTION

If You Can't Use Pallets To Stack

Then maybe the device
we're using will help you, too

R. L. Waddell, Industrial Engineer
The Vendo Company
Kansas City, Missouri

Here's a question I popped at our Methods department not long ago: "What can you dig up to help us tier our different-sized vending machines since we can't use pallets? Whatever you figure out, remember we don't want the truck operator or anyone else climbing on the stacks to arrange the packages—that's just asking for accidents."

A couple of weeks later, Methods showed me what it had come up with: a grip-type, hydraulically actuated attachment for a 1000-lb. fork truck that would pick up the packaged machines and stack them the way we wanted them.

The device had a control lever for lateral adjustment of the gripping arms; truck operators can adjust for widths from 25 to 41 inches. Length of the gripping arm is 36 inches; width of the gripping surface is 10 inches. Treaded rubber on the gripping surface gives it a real non-slip grip.

I okayed the gadget and put it to work. So far, it has jumped our handling production by about 50 per cent. In fact, it's helped us so much with a problem that almost had us stumped that we've ordered another one to handle smaller units.

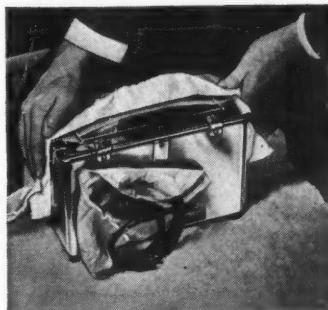
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KIMPAK creped wadding not only affords maximum protection (at lowest true cost), but helps make your product look "well-dressed." Soft, snowy-white KIMPAK is available in various thicknesses to provide optimum protection from damage to your product—and in a wide range of roll and sheet sizes to facilitate

your packaging operation. It's easy to handle, too—saves literally hours in the shipping room—then defends against damage from shock, scratching and vibration. It cushions your product during rail, truck, air or water transit, as well as in storage.

Try KIMPAK soon—for any of the Four Basic Methods of Interior Packaging: Bracing and Blocking, Flotation, Surface Protection, Absorbent Packaging. For complete information, see your nearest KIMPAK distributor listed in classified telephone directories under "Packing Materials" or "Packing Materials—Shipping"; or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

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PACKAGING MECHANICS SECTION

it's a fact

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For years, manufacturers of home appliances have paid a heavy toll in shipping damage claims. Early attempts to correct this took the form of heavy car bracing—with costs for materials alone running as high as \$17 and more.

Signode field engineers, working with shippers and carriers, developed this modern method of carload bracing—a scientific combination of steel strapping and lightweight wood bulkheads.



The results are typified by this on-arrival picture of a carload of kitchen ranges. Damage—none; cash savings on materials used—\$7.16; reduction in dunnage weight—115 lbs.!

**it's a fact
to remember!**

Regardless of what, where or how you ship, the improved packaging and shipping techniques constantly being developed by Signode steel strapping specialists are worth investigating . . . today if you're engaged in DEFENSE or ESSENTIAL civilian production . . . or TOMORROW when the need to cut costs and increase sales may become more urgent than ever before.

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Foreign subsidiaries and distributors world wide.

this seal



means security in shipping

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Steel Strapping . . .

(Continued from page 62)

spaces created at the ends of solid loads?

A. Yes. This can be done by using fibre corner troughs at the horizontal edges of a small unit in each end of the car. This unit should be confined with four steel straps applied in a vertical plane.

Q25. Can steel strapping be used to prevent side shift of containers in the doorway area?

A. Steel strapping tensioned between door posts with or without fibre backup sheets, is a highly rated method for retaining products in position in the doorway area.

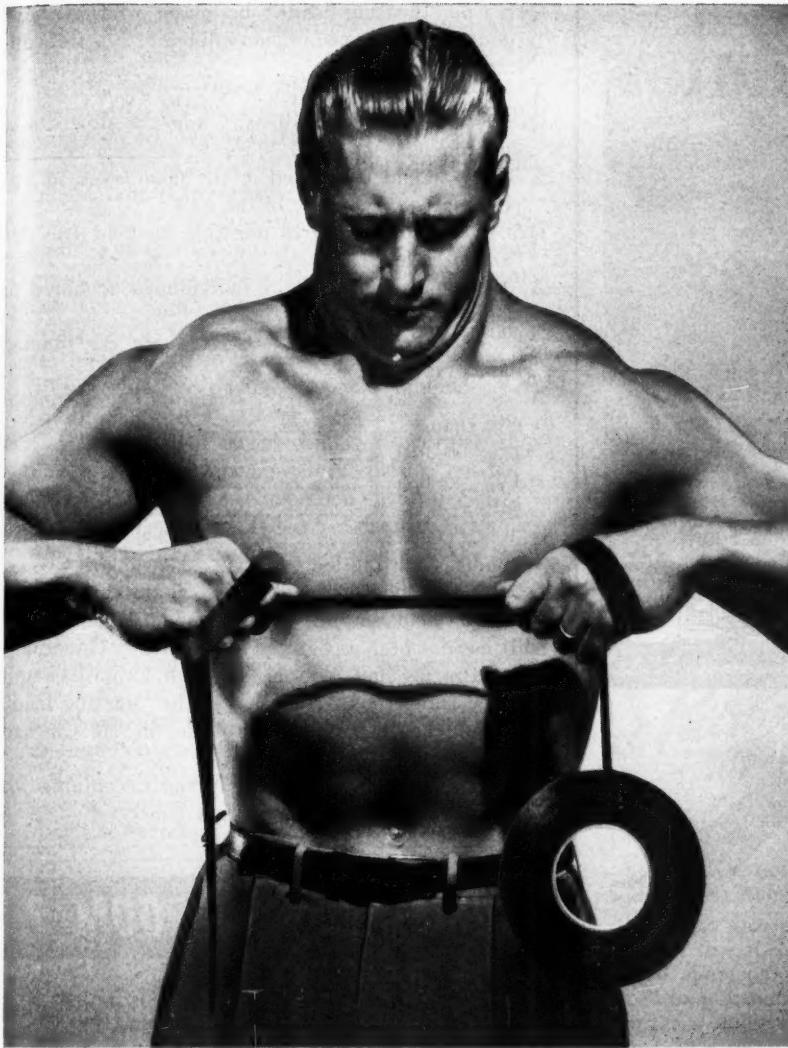
Q26. What are the standard dimensions of box, refrigerator, flat and gondola cars?

A. Box cars are made with inside widths which vary from 8'6" to 9'6". Lengths are usually 40'6" or 50'6". The present trend is toward the 9'2"x40'6" car with a 10' clearance height. Refrigerator cars vary from 8'2 $\frac{3}{4}$ " to 8'10" in width and 33'2 $\frac{3}{4}$ " to 42'6" in length. Height varies from 6'11" to 7'7 $\frac{1}{2}$ ".

Flat cars usually have a minimum width of 9' between inside faces of stake pockets. Lengths may vary from 42' up to 60'. Gondola cars usually have a minimum of 9' inside width and will vary from about 40' up to 60'.

Specific information for any particular car may be secured from any current Railway Equipment Register.

More questions on page 64



World's strongest tape?

So strong even a "Mr. America" can't break it! This new, unbelievably tough "SCOTCH" Brand Filament Tape can speed your handling jobs too.

Pull it, yank it, try to tear it—"SCOTCH" Brand Filament Tape is super-strong! And it's ready to speed dozens of handling operations in your plant—from raw materials to the finished product.

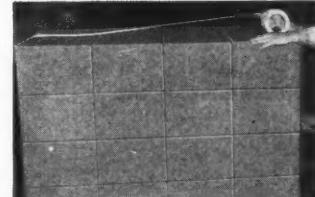
This tape is strong because over 5,000 rod-like continuous strands of high-strength filaments reinforce every inch of tape width—just as steel bars reinforce concrete. That's why this tape gives you 5 times the tensile strength, 50 times the tear-resistance of most

industrial tapes now on the market. And this tape is *resilient* because the filaments are imbedded in an elastic, shock-proof rubber adhesive that sticks at a touch—right off the roll! No difficult disposal problem, either. Get the facts on this time-saving tool today. See for yourself how thousands of manufacturers are getting "around" flow problems with "SCOTCH" Brand Filament Tape No. 880. Write Dept. F-41, Minnesota Mining & Mfg. Co. in St. Paul 6, Minnesota.

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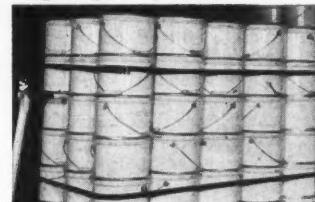
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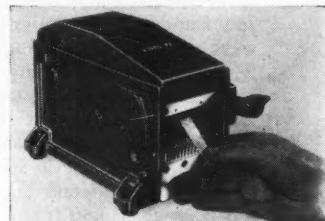
PALLETIZING almost $\frac{3}{4}$ of a ton by strapping cartons together with "SCOTCH" Brand Filament Tape. Speedy use of tape reduces labor costs and tape won't cut or damage cartons in transit.



BUNDLING three large aluminum rods, weighing 125 pounds, takes only a few laps of "SCOTCH" Brand Filament Tape. Brass rods in foreground, already taped, are 12 feet long, weigh 200 pounds.



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PACKAGING MECHANICS SECTION

Q27. Can "floating loads" be made when various products are shipped in many different types of containers?

A. Yes, without undue difficulty.

Q28. Where should high density items be stowed in a "floating load"?

A. They should be stowed in the floor layer, at approximately the center of the unit.

Q29. Does the answer to question 28 hold true for "anchored loads"?

A. Yes, unless the items are individually anchored to the car walls.

Q30. In what sizes, and strengths are car bracing bands made?

A. Size Minimum Load Strength

2" x .050.....	9500 lbs.
----------------	-----------

1 1/4" x .050.....	6000 lbs.
--------------------	-----------

1 1/4" x .035.....	4000 lbs.
--------------------	-----------

3/4" x .035.....	2500 lbs.
------------------	-----------

3/4" x .028.....	2000 lbs.
------------------	-----------

8 gauge high tension wire.....	2000 lbs.
--------------------------------	-----------

Q31. Is the "floating load" an acceptable method for bracing acid, shipped in carboys?

A. It has not been recognized in the "Rules Governing the Bracing and Shipping of High Explosives and other Dangerous Articles", yet the "floating load" method has been in constant use in the Chicago area for 25 years.

Q32. Is the "floating load" method acceptable for products shipped on flat or gondola cars?

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Better production-proven machines for faster, lower cost packaging.

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QUINCY, ILLINOIS

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A. Yes. Carloads of Creosoted poles, piling, lumber, rails, steel pipe and related items are usually all "floating loads". The "floating load" method is permitted for many commodities shipped on open top equipment so long as safety rules are fulfilled.

Q33. Are there any rules to be followed when making shipments in railroad cars?

A. Yes. The "Rules Governing the Shipping of Commodities on Open Top Cars", issued by the Association of American Railroads, provide minimum and mandatory requirements.

The "Rules Governing the Shipping of Commodities in Closed Cars" are recommended except for safety regulations on a few specific commodities, as a result of experience over the years.

Q34. What are some of the commodities whose shipping is governed by mandatory rules?

- A. (a) All commodities shipped on open top cars.
- (b) High explosives and other dangerous articles.
- (c) Fruits and vegetables, according to the tariff.
- (d) Some vitreous clay products.

Q35. What procedure should be followed for shipping an item that is not listed in the rules book?

A. Follow the same general bracing pattern as specified in the rule book for a similar item. Ask for the advice and assistance of the local RR Inspector and the representative of your strapping supplier.

If there will be a considerable movement of the items in question, "Shippers must procure authority from the Secretary, Mechanical Division, Associa-

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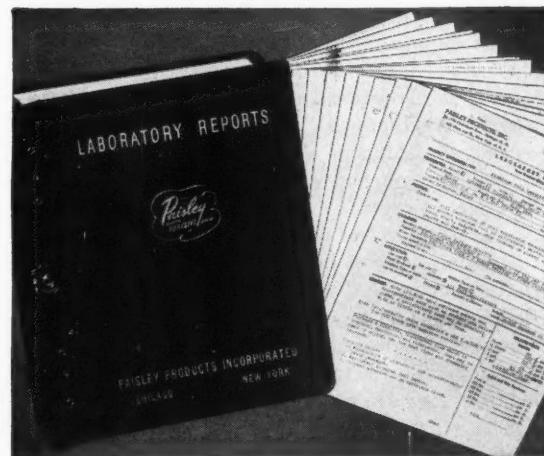
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- #3020—complies with JAN-P-140
- #3850—complies with UU-T-81c
- #3354—complies with JAN-P-133
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PACKAGING MECHANICS SECTION

tion of American Railroads, or the Chairman, Committee on Loading Rules, to make such experimental shipments."

Fourteen drawings of the proposed loading and bracing method must accompany requests for authority, together with the names of the railroads serving the shipper.

Q36. Will car bracing by steel strapping compensate for poor stowage?

A. No bracing system will have a chance of success if the lading has not been properly stowed.

Q37. Can cylindrical items, long in comparison to their diameter, be packaged to simplify carload stowage and bracing?

A. Yes. Carbon electrodes, up to 18" in diameter and about 6' long are a prime example.

The most successful method developed is the unitized method, in which the electrodes are stowed on their sides in pyramid fashion, and securely strapped to two skid runners.

The skid loads are placed in the car and the entire load is braced under either the "floating load" or "controlled load" method. This method was widely publicized by one of the larger shippers.

Q38. How can skid loads of merchandise be braced for safe transit if the containers do not have sufficient vertical strength to withstand the shocks of a second deck?

A. Many containers will not withstand concentrated loads. False decking will distribute the pressure and

reduce the potential damage.

Q39. How can the second deck, in loads of refrigerators and stoves, be prevented from side shifting?

A. Short lengths of heavy punched car bracing strap, crossed over each other, and nailed into crates in adjacent rows and layers usually eliminate side shift. When tall and narrow products are involved it may be necessary to nail short pieces of strapping to the tops of adjacent cases in the second layer.

Q40. What is presently considered the best method of bracing large rolls of paper which are stowed on their sides?

A. Stow the rolls in units of five, three rolls in the floor layer and two in the second layer, securely strapping each unit. This gives consistent roll to roll contact. In shipments of seven to nine rolls, an interlaced steep strap should be used to encircle five of the inner rolls in the unit. This is in addition to the other steel straps.

Q43. What is meant by zone impacts?

A. This refers to graphical representation by zones of miles-per-hour coupling impacts.

1st half of 3rd zone—6 miles per hour

1st half of 4th zone—8 miles per hour

1st half of 5th zone—10 miles per hour

Q44. How can equal tension be secured in all steel strapping used to brace the lading?

A. Equal tension can be attained by simultaneous use of one stretcher for each strap.

MARSH STENCIL MACHINE CO. • 67 MARSH BLDG. • BELLEVILLE, ILL., U. S. A.
Circle No. 51 on Reader Service Card for more information
FLOW • APRIL, 1951

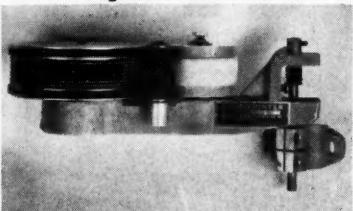
FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION

RIVERSIDE, CALIFORNIA

McALLEN, TEXAS
Circle No. 52 on Reader Service Card for more information
APRIL, 1951 • **FLOW**



Circle No. 53 on Reader Service Card
Add the "WHIPPET" MARKER to your Conveyor Line . . .



Automatically dates, codes, or marks production runs of cartons, packages . . . readily adapted to your present conveyor lines.

Friction between Marker and moving package or carton will imprint date, code or any other information. It will automatically spot-print legend. In operation the printing drum spot-prints, turns immediately in $\frac{1}{2}$ revolution or less to a positive stop; then is ready to repeat the cycle. There is no oscillation of the printing drum.

Inking is through a felt roller that has a self-contained reservoir.

Uses interchangeable rubber type.

Used by candy manufacturers, distillers, oil companies, food packers, etc., to mark filled bags, cartons, boxes, rolls, cans, etc.

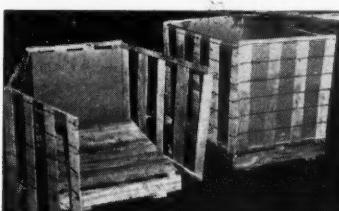
Send for "Free" Catalogue

We make machines to print corrugated cartons and multiwall bags that are filled or flat.

THE INDUSTRIAL MARKING EQUIPMENT COMPANY, INC.
 454 Baltic Street, Brooklyn 17, N. Y., Dept. F
 Main 4-8511

DISPOSABLE WIREBOUND CONTAINERS

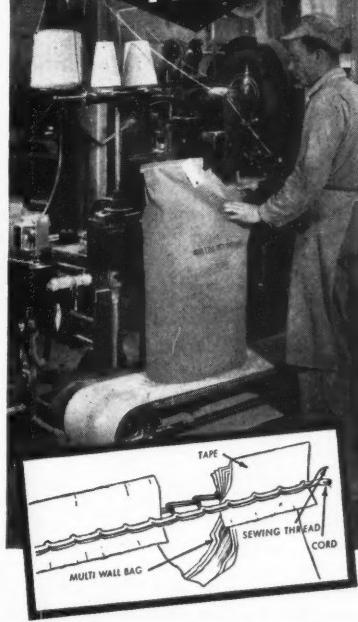
One-trip wirebound bin-type pallet containers are used by the Oldsmobile Division of General Motors Corp. for shipping materials from the plant in Lansing, Mich. to Oldsmobile-Buick-Pontiac assembly plants throughout the country. Despite increased over-all costs for the containers, as compared to the reusable wirebound pallet-type bins which were formerly used, appreciable net savings were realized with the disposable units. Reasons: 1. Elimination of costs for preparing containers for shipment back



Circle No. 124 on Reader Service Card to Lansing. 2. Elimination of shipping costs for this return trip. 3. Elimination of expense of repairing any damaged containers. 4. Scheduled control of container supply and inventory, which was not possible when containers were returned. The present bin is 30" x 48" x 29". Liners are inserted in the bins to prevent small parts from passing through the spaces between the slats.—Courtesy, Wirebound Box Manufacturers Assn.

Tape-bound Closure for Multiwall Paper Bags:

LOW-COST SECURE FAST



UNION SPECIAL Style 21800 H Bag Closing Machines, with Style 80600 H sewing heads, shown here, are heavy-duty, high production units for making low cost tape-bound closures on large multiwall paper bags.

A single foot pedal controls synchronized conveyor and sewing head. Automatic tape cutter on sewing head saves time and helps make operation smooth and easy to learn.

Sewing head and conveyor are quickly adjustable for varying bag heights and scale or platform height from floor. Entire unit is ruggedly built for dependable service in high-volume production.

Ask for a copy of this Bulletin



It's easy to find just the right unit to meet your individual needs in Union Special's big line of bag closing machines. Ask for a copy of Bulletin No. 200, "UNION SPECIAL FILLED BAG CLOSING MACHINES"

Union Special
 MACHINE COMPANY
 415 N. FRANKLIN ST., CHICAGO 10, ILL.

Circle No. 55 on Reader Service Card

Can You Use These?



PACKING SPACERS

★ CYLINDERS

★ BLOCKS

★ ROLLS (hard or soft)

Core Diameters:

1½, 2½, 3, 4, 5 inches

Outside Diameters:

Up to 8 inches

Length of Rolls and Blocks:

From 1 to 48 inches

★ Used for the protection of various fragile and/or heavy articles in corrugated or wooden boxes . . . Write for samples and prices.



CENTRAL FIBRE PRODUCTS CO., INC.
 901 SOUTH FRONT STREET • QUINCY 2, ILLINOIS

Circle No. 54 on Reader Service Card for more information
FLOW • APRIL, 1951

NEW PRODUCTS

For more information on these products, use the postcard bound into this issue.

No matter how tightly the packages on your conveyor are spaced, a new package counter made by

Alvey Conveyor Manufacturing Company counts them without any misses. The unit fits between sections of gravity, belt or live roller conveyors. A short powered belt carries the package forward to a barrier; when the package hits the barrier, its front end is raised and the belt carries it over the barrier onto a live roller discharge unit as the numbering machine registers the count. The barrier resets itself, ready for the next package. Capacity of the counter is about 40 per minute. Standard units are designed for use on conveyors $16\frac{1}{4}$ " between rails. Other widths can be supplied.

Alvey Conveyor Mfg. Co.

Circle No. 130 on Reader Service Card for more information

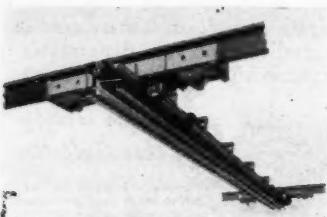
Articulated trolleys carrying a new crane designed by American Monorail Company make sure

that each wheel bears its full share of the load, in perfect alignment with the craneway tracks. All friction is eliminated by thrust bearings at all load bearing points; the manufacturer says cranes equipped this way

travel smoother at higher-than-normal speeds, under constant service operation. Two new methods of propulsion are available: fluid drive using the hydraulic coupling principle and a heavy gear drive consisting of slip ring motor with heavy duty gear reducer directly connected to the drive shaft.

American Monorail Co.

Circle No. 131 on Reader Service Card for more information



When you're making time studies, a movie of the operation can help prove the fairness of your conclusions. Bell & Howell Company makes 16mm cameras that are naturals for motion picture studies of the production operations you're gauging. There are seven accurate film speeds designed especially for time study work, and special projectors for time study use.

Bell & Howell Co.

Circle No. 132 on Reader Service Card for more information

One man operates the portable adjustable ramp made by Superior Railway Products Corporation.

The 4-ton capacity ramp rolls from one job to another on a two-wheeled dolly; when you get to the job area, just remove the dolly and set up the ramp. While one truck is pulling out and another backing in, only the front leaf need be raised. The ramp

can be turned into a semi-permanent installation in a jiffy by pinning its legs to the dock. Ramp's width is 48 inches; runway length is 60'.

Superior Railway Products Corp.

Circle No. 133 on Reader Service Card for more information

A single-cylinder, low-pressure, double-action hydraulic hoist system is the big selling feature on Elwell-Parker Electric Company's new 6000-pound capacity electric battery fork truck. Other features: fast, smooth lifting and lowering action; automatic protection against overload; precision control of fork and load by the driver at any height of load elevation. The hydraulic cylinder is centered in the hoist frames to give more visibility of load and travelway. Truck is the automotive, center-control type with entrance

or exit for operator from either side. Its fitted with foam-rubber seat cushion and adjustable backrest.

Elwell-Parker Electric Co.

Circle No. 134 on Reader Service Card for more information

Two types of bulkheads are made by Pittsburgh Steel Products Company to keep your damage claims down by holding merchandise secure during rail shipments. Ratchet bulkheads are constructed of seamless steel tubing and galvanized welded wire fabric; average installation time is about two minutes. Sectional bulkheads, used in bulkheading tiered ship-

ments, are made of two identical sections made to fit on top each other. Each section weighs 105 lbs. Telescoping cleats make it possible to fit all car widths. Installation takes about four minutes. Shown here is the sectional type.

Pittsburgh Steel Products Co.

Circle No. 135 on Reader Service Card for more information

Fast handling of heavy loads one of your problems? Then take a look at the Model 2500 Kalamazoo Speed Truck. It's built for fast handling of any kind of material or product. A 2-cylinder 13 hp air-cooled Wisconsin engine powers the truck. Three speeds forward and one reverse give it maneuverability; its

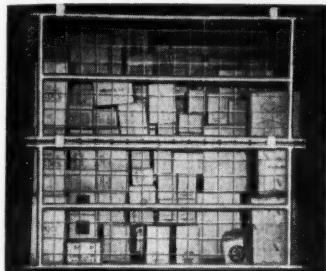
wheel turning radius is 64 inches. A deck loading area of more than 20 square feet handles regular loads, and deck space next to the driver takes care of long items. You can have the truck with either pneumatic or U. S. Royal Innacush tires.

Kalamazoo Mfg. Co.

Circle No. 136 on Reader Service Card for more information

High speed revolution counters with flexible shaft drive for convenient counter positioning are being

FLOW • APRIL, 1951



marked now by Production Instrument Company. The counter operates at speeds of 4000 cpm. It was an extra large shaft with oversize bearings, and an all steel housing with plastic windows. Drive unit includes flexible shaft (12" to 36" lengths), adaptor and bracket for connecting to the counter and an adaptor and bracket for connecting to the drive shaft. Available with top coming or top going shaft rotation, 5 or 7 number wheels, right or left shaft exten-

Production Instrument Co.

Circle No. 137 on Reader Service Card for more information

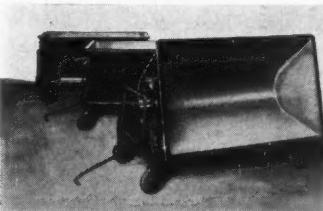


Any dry material can be handled in the new side-dumping shop trucks made by The Klaas Machine & Manufacturing Company. The side-dump feature makes it easy to dispose of machine chips and scrap. You can pull the trucks by hand or with powered vehicles, singly or in trains. Capacity is about one cubic

for special currents are available, too.

A. J. Gerrard & Co.

Circle No. 138 on Reader Service Card for more information



yard. The truck is 36 inches wide, 140 inches high and 6 feet long. Other sizes can be furnished, if you need them.

The Klaas Machine & Mfg. Co.

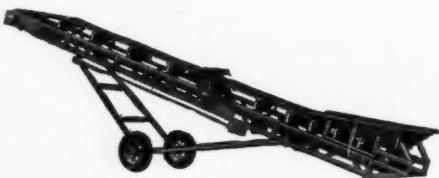
Circle No. 139 on Reader Service Card for more information

Delivered PROMPTLY



A typical installation of Sectional Conveyor assemblies "Job-Fitted" to the efficient operation of this aggregate plant.

Today three major factors must be considered in the purchase of material handling equipment—performance, price and **delivery**. Baughman Sectional Hi Speed Job-Fitted Conveyor assemblies are built to meet these specifications. Each Baughman Sectional Conveyor is engineered, thoroughly tested and load rated, insuring satisfaction in every installation. Through quantity production of Sectional Conveyor Assemblies it is possible to stock basic units, which insure prompt delivery at lower cost.



The same sectional assemblies and job fittedness is available in portable and permanent Baughman Conveyors. Speedy quotation, prompt delivery and shipment in most cases from stock, allow Baughman to offer immediate action to your inquiry.

Write for Free Catalog #A-57 or contact your nearest Baughman Industrial Distributor.



manufactured by
BAUGHMAN MANUFACTURING CO. Inc.

112 E. ARCH STREET

Circle No. 56 on Reader Service Card for more information
70

JERSEYVILLE, ILL.

Expansion of its Spacemaker line to include a 4000 lb. capacity model for stacking and tiering skids has been announced by Lyon - Raymond Corporation. Like lighter Spacemaker models, the truck is designed for narrow aisles and crowded areas. It is available with a standard 24-inch wide platform, with lengths ranging from 30 to 48 inches. It's sold with a lowered height of either 7 or 11 inches. The tractor is equipped

with a 10-inch drive wheel and two 7-inch stabilizing wheels mounted on a spring suspended swivel caster. Using this truck, you can right angle stack a 36-inch long skid platform from a 5-foot wide aisle.

Lyon-Raymond Corp.

Circle No. 140 on Reader Service Card for more information

Because delivery of its regular line of steel shelving is slow these days, Lyon Metal Products, Inc., is mak-

NEW

MODEL-H NOLAN
1-Man Car Door Opener

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before!

- NEW improved balance assures automatic unlocking of pawl for chain stripping during door opening or closing operation.

NEW safetyhook swings 180 degrees; locks positively in place before pulling; cannot become detached.

Opens Doors In 2 Seconds or Less!

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

FREE LITERATURE

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

THE NOLAN COMPANY
118 Pennsylvania Street • BOWERTON, OHIO

\$29.50
F.O.B.
BOWERTON

Circle No. 57 on Reader Service Card for more information
APRIL, 1951 • FLOW

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Beverly
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ing a complete line of adjustable steel-wood shelving that you can get in a fairly short time. Rigid steel uprights support the hardwood shelves in a clever way that uses no bolts: a pressed steel clip attaches each shelf to the steel upright. The steel-wood shelving is available in dimensions of 3 feet in width, 1 or 1½ feet in depth and 7 feet in height. Lyon says the shelves are easy to move, take down or rearrange; only tools you need are a hammer and a screw driver.

Lyon Metal Products, Inc.

Circle No. 141 on Reader Service Card for more information

Permanent magnetic conveyor elements, available in three styles for conveying scrap, plate, sheet, rod, bar, pipe and shapes have been developed by the Eriez Manufacturing Company. Because a standard iron pipe length or other standard section can be used as the revolving induced magnetic unit, the elements are simple to repair, resurface or replace. Maintenance is simple, too, Eriez says. Magnetic strength of the units can be adjusted by changing the air gap between the plate magnet and revolving members suspended above. The power source or magnetic element can be swung down and away from the magnetically induced members, eliminating the magnetic attractive force for easy cleaning—or for non-magnetic operation.

Eriez Mfg. Co.

Circle No. 142 on Reader Service Card for more information

VISIT COL. WILCO 4TH MATERIALS HANDLING EXPOSITION CHICAGO—APRIL 30—MAY 4



REMEMBER WILCO PALLETS

WILLIFORD MFG. CO.

Box 6095-F, Buntn Station
MEMPHIS 11, TENNESSEE

Circle No. 58 on Reader Service Card for more information

FLOW • APRIL, 1951

Well Stacked!

Prefabricated pallet racks by Equipment Mfg. Inc. permit stacking to conserve floor space without tying up low level material. They are engineered for strength, safety and flexibility. There's a type to suit your particular needs.

EMI



EQUIPMENT MFG. INC.

21552 Hoover Road Detroit 5, Michigan

Circle No. 59 on Reader Service Card for more information

The perfected CRANE SCALE



HYDROSCALE

WEIGHS THE LOAD . . .
... AS YOU LIFT IT TO MOVE IT

An accurate, rugged, low headroom hydraulic crane scale. Equipped with precision laboratory instrument and tempered glass dial cover. Makes it practical to weigh whenever and wherever you lift a load. Eliminates the need for weighing stations. Eliminates work, man power and equipment tie-ups. One plant that tried one now has ten. Practical for shipping, receiving, testing, measuring, inventory.

3 dial
sizes
12"
24"
30"

Models
500
to
100,000
pounds
capacity



WRITE FOR CATALOG.

HYDROWAY SCALES, INC.

20624 WEST 8 MILE ROAD P. O. Box 4754 - DETROIT 19, MICH.

Circle No. 60 on Reader Service Card for more information
72

Two rubber sleeves joined by a rotating steel collar make up the Twistite double-closure bin valve. Dust and drip-tight closure is obtained by pulling on a cable wrapped around the rotating collar, sealing the opening with a twist in each of the rubber sleeves. The valve is self-opening: elasticity of the rubber sleeves causes them to go back to their cylindrical shape when tension on the cable is released.

Stephens - Adamson Manufacturing Company, manufacturers of the valve, say that because the flexible rubber sleeves wrap themselves around lumps caught in the valve during closure, there is no danger of leakage due to variation in the size of material particles. The Twistite can be hand-controlled locally by mounting a ratchet lock on the valve to hold the cable in the closed position. Or you can control it automatically by using a small actuating motor.

Stephens-Adamson Mfg. Co.

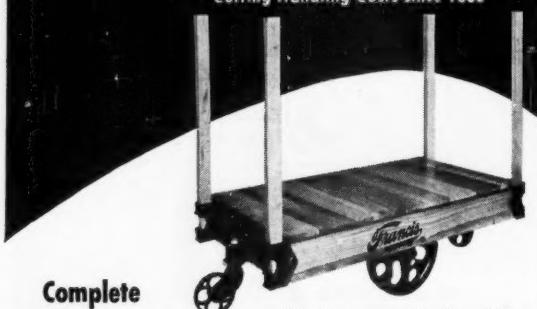
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Immediate Delivery

Francis
EST. 1880.

FACTORY-MILL &
WAREHOUSE TRUCKS

Cutting Handling Costs since 1880



Complete Line —

For every use.
Standard sizes
27" x 48" and
30" x 54" in
stock ready for
immediate ship-
ment.

Need more good trucks quick?
Buy direct from the manufacturer and save
—time AND money. Francis heavy duty,
economical trucks feature strong iron work
—hardwood frame—rigid construction. All
carefully machine fitted. Steel rims or rub-
ber tires.

WRITE TODAY for
catalog and prices

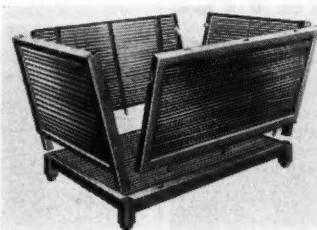
Manufactured by
HOOSIER FENCE CO. Inc.
DEPT. F 1701 E. 38th St., Indianapolis, Ind.

Circle No. 61 on Reader Service Card for more information
APRIL, 1951 • FLOW

Knock-down boxes developed by Jervis B. Webb Company can be disassembled so that 11 boxes can be knocked down and stored in the same cubic foot space required for only 4 assembled boxes. The boxes can be used as bins with bases over their tops. A patented stacking feature allows the safe and rapid transportation and stacking of loaded or empty boxes in multiple numbers; as many as three loaded units can be fork trucked at one time. Webb figures the knock-down boxes will do away with "shadow" tonnage charges—the charges made for trailer or freight car loadings of boxes not designed to use the full capacity of the vehicle's loading space.

Jervis B. Webb Co.

Circle No. 144 on Reader Service Card for more information



Drive wheels for use on bucket elevators have been introduced by Beaumont Birch Co. These wheels are said to increase chain life, and insure against chain breakage due to overload. The wheels can be built to provide any desired amount of traction and can be used with practically all chains of standard construction.

Beaumont Birch Co.

Circle No. 145 on Reader Service Card for more information

Cut Loading Time in HALF!

WITH
ISLAND
PALLET
DOLLIES

Puts an end to
the pallet
handling problem.



Fork trucks can't enter a reefer car! That's where the Pallet Dolly takes over. Staggered bottom rollers eliminate trouble from floor racks. Has 14 gauge rollers on 4" centers... 2 x 2 x 1/4 angle frame... built to handle your pallet... all parts are standard equipment. Write for detailed bulletin RTD-1A.

Dept. F-4

ISLAND
EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, New York



See Our Exhibit at the Materials Handling Show, Booth No. 235
Circle No. 62 on Reader Service Card for more information
FLOW • APRIL, 1951

Circle No. 63 on Reader Service Card for more information

**Moving or Storing is Rapid, Convenient
and Inexpensive with**

IRONBOUND SEMI-LIVE SKID PLATFORMS



Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.



SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.



THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.



IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
30 HOFFMAN PLACE • HILLSIDE, N.J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS



OLSON CONVEYORS

No. 2080 Portable Slat Conveyor
For loading and unloading heavy boxes, parts, etc. Mounted on heavy duty casters. Hydraulic height adjustment on upper end. Write for Bulletin 2080.

FOR EVERY PURPOSE

Apron, Belt, Chain, Roller, Pusher Bar, Slat, Spiral, Trolley and Wheel Conveyors . . . Portable and Stationary . . . Single units and complete systems for continuous assembly operations, material movement, etc. Engineering, design and manufacture based on 50 years of practical experience. Send for free CATALOG.



SAMUEL OLSON MFG. CO., INC.
2426 Bloomingdale Ave. Chicago 47, Ill.
Send FREE CATALOG showing OLSON Conveyor Systems at work.

Individual _____
Firm _____

Street _____
City _____

Zone _____ State _____

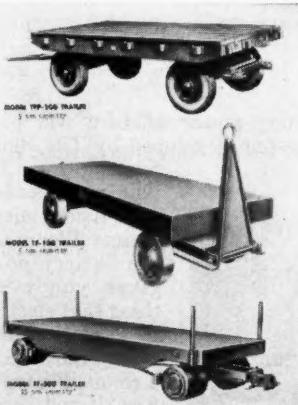
Circle No. 64 on Reader Service Card for more information

of the
Hoist
one-

Baker-Raulang Company makes about its new line of Type FC center-control fork trucks. Designed to handle 3000 to 6000 pounds, the new trucks have been built with an eye to ruggedness and easy maintenance. Same time, steering and visibility were improved to make operating the trucks easier on drivers. One pedal controls power and braking. Hoist, tilt, direction of travel and acceleration are controlled from a panel at the driver's right hand.

The Baker-Raulang Company
Circle No. 147 on Reader Service Card

Three industrial trailers for heavy duty hauling have been introduced by Phillips Mine & Mill Supply Company. You use them



singly or in tandem. The trailers are all-welded of heavy gauge steel. All three models are available with a fifth wheel at both ends or at one end only; all wheels are Timken Roller Bearing equipped. Two of the trailers are five-ton capacity, the third is ten-ton.

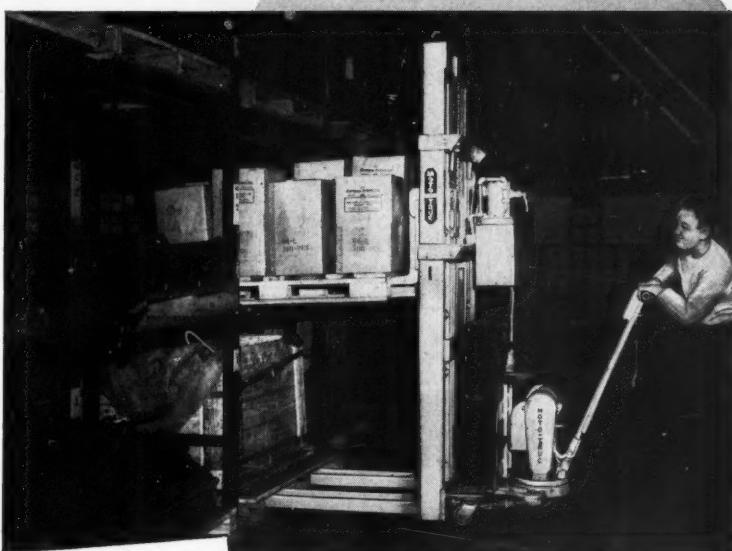
Phillips Mine & Mill Supply Co.
Circle No. 148 on Reader Service Card

Four times stronger than ordinary concrete: The Monroe Company, Inc., claims this property from tests it made to see just how strong its Armor Floor Resurfacer was. Monroe says Armor bonds perfectly to old concrete floors; it can be laid as thin as $\frac{1}{2}$ -inch, right over the present base. It will not shrink or break its bond. You can send traffic over it 24 hours after it's laid down, if you have to.

The Monroe Co., Inc.

Circle No. 149 on Reader Service Card

There's a Rapid Trend to Palletizing with **MOTO-TRUCS**



One of the
**MOTO-TELESCOPIC
HI-LIFT
TRUCKS at
Thompson
Products Co.
Cleveland**

Since turning to palletizing with Moto-Truc, Thompson Products Company has been able to use about 25,000 fewer square feet of floor area to do the same job of warehousing, and save labor.

**SEE OUR EXHIBIT AT
NATIONAL MATERIALS
HANDLING
EXPOSITION
Chicago, April 30
to May 4
BOOTH NO. 201**

**HI-LIFT, PALLET
AND PLATFORM
TRUCKS**

• A few of many reasons why leading materials handling engineers choose MOTO-TRUCS:

Moto-Truc Telescopic Hi-Lift Trucks are from 18" to 20" shorter than other trucks of this type, due to more compact power unit, enabling operation in narrower aisles.

Controls, in easy grip roller type handle, reduce operator fatigue.

Patented articulating hinged spring unit holds drive wheel down on floor.

Four point mounting under load insures stability.

Power by 12-volt motors for level operation and 18-volt for ramp operation.

Brake, mounted on drive wheel and controlled directly from steering handle, gives dependable protection for both operator and load.

**WRITE FOR BULLETIN NO. 51
AND SPECIFICATIONS**

The MOTO-TRUC Co.
1953 E. 59th Street
CLEVELAND 3, OHIO.

**Originators and world's largest
exclusive manufacturers of
motorized, battery operated
walkie type trucks**

Circle No. 68 on Reader Service Card for more information

AMERICAN
Prefabricated
Pallet or Skid RACKS

- Erected without bolting or welding
- Pressed Fit assembly of prefabricated frames for fast sturdy construction
- Available in Standard Tubular design or of Heavy Duty construction for any sized pallet, skid or box.
- Stock is readily accessible from any level.

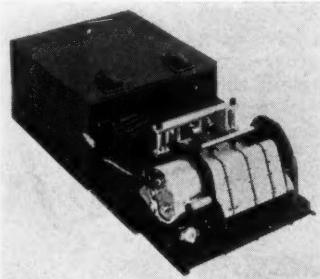


Write
for
Catalog

5961 Linsdale • Detroit 4, Michigan

Circle No. 69 on Reader Service Card for more information
76

Whose fault is it when a shipment arrives at its destination all banged up? The Impact-O-Graph tells you. It's an instrument developed to help you track down sources of damage to your goods in shipment. Goes right along with the shipment—either in the container on the floor or wall of freight cars—to record the extent of shock, when it occurred



and direction. A dry-cell battery actuates its motor. Coated tape on a roller is marked by three scribe arms that "write" down the facts. In its case, the Impact-O-Graph measures 9 1/4" x 8 1/2" x 5" and weighs a little over 6 pounds. Made by The Impact-O-Graph Corporation.

The Impact-O-Graph Corporation
Circle No. 150 on Reader Service Card for more information

Self-contained battery power drives a new overhead transportation system developed by The Bloom System, Inc. The unit is independent of outside energy sources. Bloom says the battery power gives you everything that electricity can, at a fraction of the cost. As a result, Bloom figures, it will permit the use of electrified overhead systems to be greatly extended because of the simplicity, low initial cost and safety of the system. Bloom calls it the Mono-Power System.

The Bloom System, Inc.
Circle No. 151 on Reader Service Card for more information

Two new types of sealing tape have been announced by Technical Tape Corporation. The first is water and moisture proof, designed for sealing packages in overseas shipments. It meets government specs JANP 127 and ANT 12-A. Containing a Geon polyvinyl compound, this pressure sensitive cloth tape is sold in olive drab, white and black. The other tape has been tagged "Breakpruf". It can be used for heavy duty taping of wire coils, metal strips, tubing, lumber and a string of other materials. A paper backing reinforced with glass fibers gives Breakpruf excellent tear resistance, Technical says.

Technical Tape Corp.
Circle No. 152 on Reader Service Card for more information

APRIL, 1951 • FLOW

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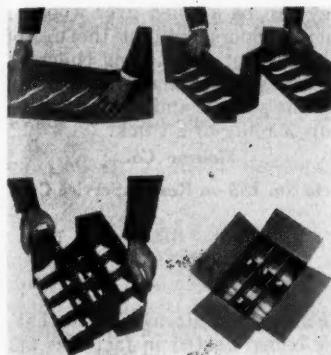
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FLOW

Design engineers of Shelton Manufacturing Company, Inc., have come up with what looks like

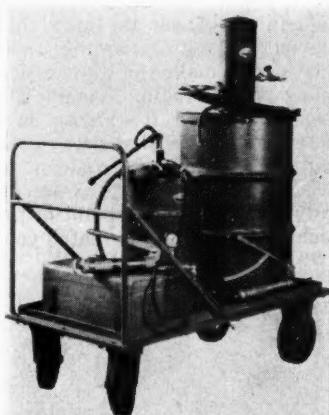


a slick idea for corrugated carton nestings. Only one piece of board, cleverly die-cut and scored, goes into Shellnest cartons. The cartons quickly fold into a nest with extra cushioning strength in each partition. Glass containers cannot touch each other or the side of the carton.

Shelton Mfg. Co., Inc.

Circle No. 153 on Reader Service Card

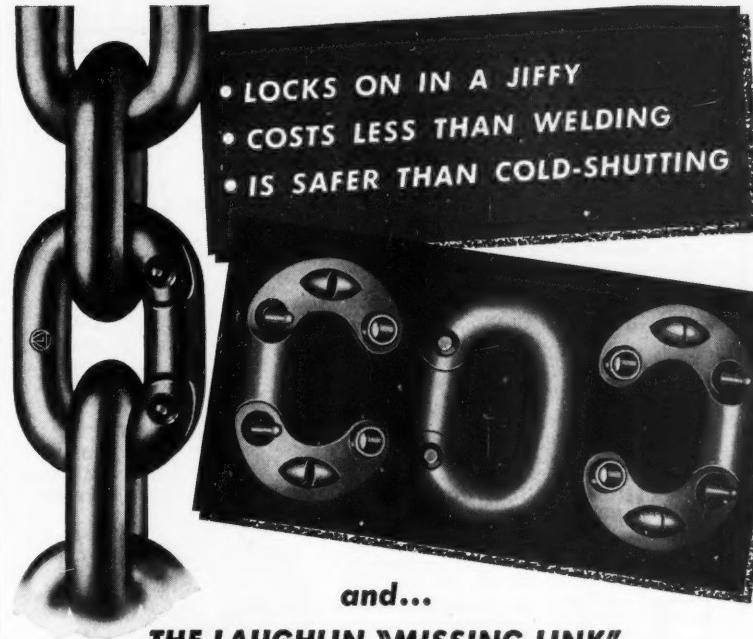
Reloading of individual bearings and centralized lubricating systems can be speeded up by



the Lubrikit J. N. Fauver Company, Inc., makes. The kit has an electrically operated barrel pump mounted on a 400 pound grease drum for the filling of grease reservoirs—and everything else you need for the job.

J. N. Fauver Co., Inc.

Circle No. 154 on Reader Service Card



Makes Your Chain Stronger Than Ever!

To attach a "Missing Link" you simply insert the halves through the links to be joined, fit the rivets into the rivet holes, then peen the rivets to fill the countersunk holes. And once on, the pressure-matched *interlocking lugs* take all the load—with no strain on the rivets.

Add the fact that drop-forged, heat-treated "Missing Links" are *made* stronger than proof coil chain to begin with, and you'll see why these time- and money-saving repair links give you a stronger, safer chain

than you ever had before!... Laughlin "Missing Links" are available in all sizes from 3/16" to 1 1/8" at your mine, mill or oil field supply house.

Free! Catalog-Data Book

Tells you how to select the *right* wire rope and chain fitting for every job. Complete specifications—helpful tables. Use the coupon below.



SEND IN TODAY
...no cost or obligation

*Reg. U.S. Pat. Off.

THE THOMAS LAUGHLIN COMPANY
24 Fore St., Portland 6, Maine
Please send Catalog-Data Book #150 to:

Name. Position.

Company.

Street.

City.

Zone. State.

LAUGHLIN

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS



Circle No. 70 on Reader Service Card for more information

Circle No. 71 on Reader Service Card for more information

Nutting

THE ONLY MECHANICAL JACK WITHOUT SPRINGS

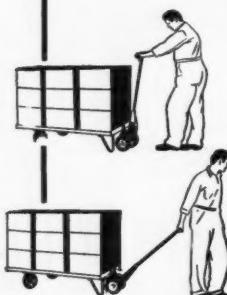
The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service. It's always dependable.

One lift truck and two dead skids cost about the same as TWO NUTTING JACKS AND TWELVE SEMI-LIVE SKIDS. That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

SEND FOR BULLETIN 48-JS

Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheels, casters.



NUTTING TRUCK AND CASTER COMPANY

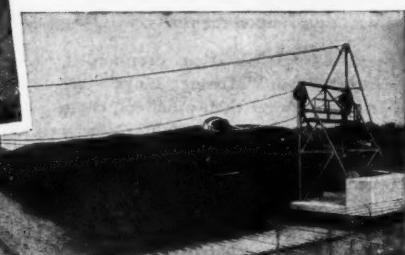
1605 DIVISION STREET, FARIBAULT, MINNESOTA

How to Cut Your Bulk Storage Costs with a SAUERMAN POWER SCRAPER



(Above) Muriate stored in long building is reclaimed by Sauerman scraper.

(Right) Sauerman scraper powered by 100 h.p. motor handles 100 tons of coal an hour.



Write for this free book on Bulk Storage

All kinds of bulk materials are stored and reclaimed successfully at great savings in manpower and overhead by using Sauerman Power Drag Scrapers. The storage may be in the open or under cover, the daily capacity required may be a hundred tons or many thousand tons, the available space may be just a large bin or a ground area of many acres—in every case Sauerman engineering provides the correct machine to meet all requirements satisfactorily and economically.

Even the largest Sauerman machine can be controlled by one man. Initial cost is reasonable, upkeep simple and power consumption moderate.

SAUERMAN BROS., INC.

540 S. Clinton St.,

Chicago 7, Ill.



Circle No. 72 on Reader Service Card for more information

Plasticized floorings which are claimed to produce very hard and smooth surfaces have been placed on the market by the Monroe Co. They can be applied over wood or concrete floors without the use of metal lath or roughening concrete. The ready mixed material is spread over the surface and packed with a tamper, a roller or a truck.

Monroe Co.

Circle No. 155 on Reader Service Card

Full use of storage space that's now being wasted in factories and warehouses is made possible by a device that can add more than five feet to a fork truck's maximum lift. The new attachment, introduced by Automatic Transportation Company, goes on any standard fork truck Automatic makes, without increasing overall height of the truck. At peak height, it handles 2500 pound loads. If you need it, you can add as much as 62 inches to your truck's stacking capacity with the new attachment.

Automatic Transportation Co.

Circle No. 156 on Reader Service Card

Stitching long cartons? The Young Horizontal Inverted Head Stitcher was designed for just that job. If you're packing rods, tubing, venetian blinds or anything that goes out in long cartons, this machine should make the work easier. Young Wire Stitching Machine Division developed it—Young says it's the first practical answer to the long carton-stitching problem, especially when the cartons are already filled. Stitching point of the machine can be built to match your

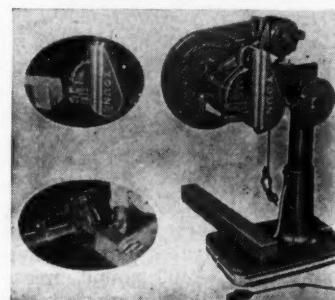
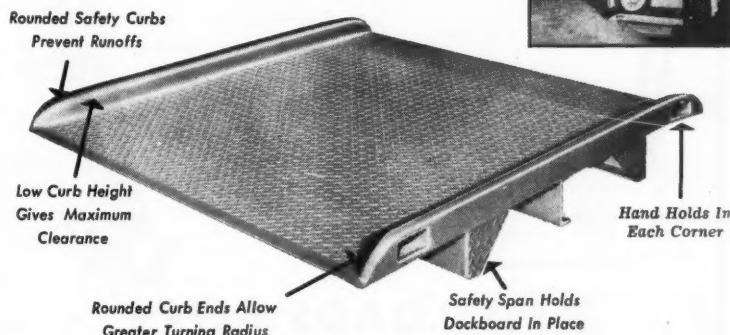
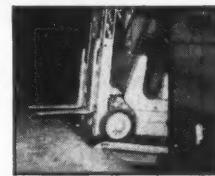


table height. The carton to be stitched is laid flat on the table and the full overlap flaps are folded over the thin narrow clincher arm, which

PACKAGING MECHANICS SECTION

MAGCOA Magnesium DOCKBOARDS

**...will solve your
carloading problems**



VISIT US AT BOOTH 522
International Amphitheatre, Chicago
April 30—May 4

- ★ Weigh $\frac{1}{4}$ as much as steel ramps of equal size and strength
- ★ Bevel edges minimizes jar-ring of load and equipment
- ★ Bend angle keeps Dockboard flush with floor and dock
- ★ Raised pattern safety tread
- ★ Magnesium is non-sparking for greater safety
- ★ Every Dockboard designed to meet your particular specifications

Write us for further information

30 Rockefeller Plaza, New York 20, N. Y.
1528 Russ Bldg., San Francisco 4, Calif.
7657 Moline St., Houston, Texas
8922 West 25th Street, Los Angeles, Calif.

**MAGNESIUM COMPANY
OF AMERICA
EAST CHICAGO, INDIANA**

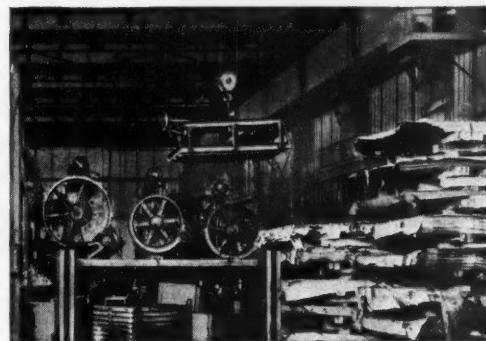


School for Handling Men

Graduating students of the seventh class in "Materials Handling Fundamentals" at Cleveland's Fenn College received graduation certificates recently. Gordon Berry, Vice President of Electric Products Company, Cleveland, is shown here handing a certificate to student James Conklin. Berry was guest speaker at the graduation dinner.

All men in the class are actively engaged in materials handling in their daytime jobs.

NOW- take steel direct from storage to presses!



At a large eastern plant for fabricating automobile bodies, Mansaver Grabs take sheet steel from the racks safely and quickly, then place it, with no damaged corners, in any position the pressman requires for production operations.

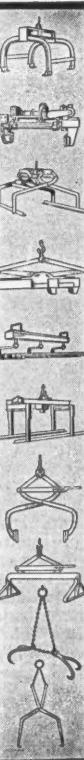
Mansaver Grabs are the hands of the crane — versatile, economical, safe. It will pay you to complete your cranes with Mansaver Grabs.

Booth 105-6-7 National Materials Handling Exposition

MANSAVER GRABS

MANSAVER INDUSTRIES, INC., 3103 East St., New Haven, Conn.

Circle No. 74 on Reader Service Card for more information



Circle No. 75 on Reader Service Card for more information

FLOOR TRUCKS

FOR MATERIALS HANDLING STANDARD AND SPECIAL



WHEELS: Metal - Rubber - Pneumatic

KEEP LOADS ALIVE



MAIN OFFICE AND FACTORY

ORANGEVILLE MFG. CO.

Orangeville, Ohio
ORANGEVILLE, PENNA.



We take pride in our product and guarantee satisfactory performance and sturdy, long time operation under the most severe use. Agencies in most principal cities. Catalog gladly furnished upon request. Repeat orders testify to the efficiency of our trucks.

Wide or Narrow...



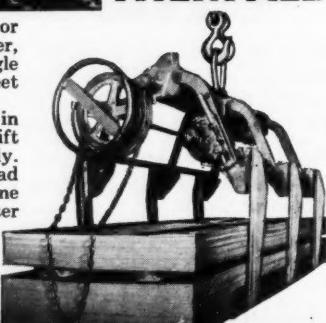
1 C-F
LIFTER
HANDLES
THEM ALL

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other method, a C-F Lifter will soon pay for itself.

Bulletin SL-25 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There's no obligation.



CULLEN-FRIESTEDT CO.

1320 South Kilbourn Avenue • Chicago 23, Illinois

80

Circle No. 76 on Reader Service Card for more information

A hinged platform makes it easy to drive The Elwell-Parker Company's new industrial truck into elevators. Overall length of the truck with its platform in load-carrying position is 109 inches. Raise the forward end of the platform and you shorten it to 84 inches. Weight of the truck: 3670 pounds. Its load capacity is two tons. The apron-type platform is hinged at a line midway on its length.

The Elwell Parker Electric Co.

Circle No. 159 on Reader Service Card

Bulky, hard-to-handle products get complete protection during shipment from a strong protective wrapping made by G. B. Lewis Company. The material is fabricated of wood slats woven together with wire. It is sold in any width you need, from 5 to 37 inches. Rolls of 300 ft. are standard. Lewis says it should be handy for packing heavy castings, gears, pulleys, coiled wires, cables and other hard-to-wrap items.

G. B. Lewis Co.

Circle No. 160 on Reader Service Card

Cable reels, paper rolls and other materials on spools can be carried and positioned easily with Lyon-Raymond Corporation's new hydraulic lift truck. One model has a capacity of 300 pounds. Opening between base forks and elevating forks is 15 inches. The truck is equipped with two 5-inch swivel casters and two 5-inch rigid casters.

The Lyon-Raymond Corp.

Circle No. 161 on Reader Service Card

APRIL, 1951 • FLOW

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PROMPT DELIVERY



New! Grooved Wheel Casters, by Albion Industries, to speed production, save valuable time, increase working space.



Albion Supremes — our Series 90 caster for rugged, tough, heavy-duty service. They're NEW — in design, in improvements, in precision standards. Full range of capacities.

Ask about our new ALL PURPOSE CASTER in lower capacities. Write for Catalogue F-1.

See us at the Material Handling Show, Chicago Booth 102

ALBION
INDUSTRIES, Inc.

ALBION - MICHIGAN

Circle No. 77 on Reader Service Card
FLOW • APRIL, 1951

Scrap sweeping is a cinch when you use magnetic equipment to do the job. Three new models of the Eriez Atomagnets are shown in a new bulletin from Eriez Manufacturing Company; each model is described and illustrated.

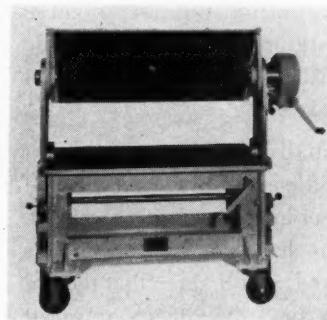
Eriez Manufacturing Company
Circle No. 162 on Reader Service Card

Heavy-duty bar trucks of steel channel and I-beam construction have been developed by Palmer-Shile Co. They can be built to handle any load capacity. Units are tilt-type for handling of long stock, including tubing, and are of reinforced all-steel welded construction with four swivel casters at the ends.

Palmer Shile Co.

Circle No. 163 on Reader Service Card

Safe handling and taking apart of heavy dies is what the Morley Die Handler was built for. Morley Machinery Corporation designed the device to make block and tackle handling of heavy dies unnecessary. It will handle dies up to 24" wide, 43" long, with a shut height from 9" to 14", weighing up to one ton. Its upper platen, with a



20"x42" area, has a vertical travel of 16½". This platen is mounted on heavy hardened steel trunnions running in anti-friction bearings, may be rotated in a full circle by the upper hand crank. Four heavy casters make the unit easily movable. Four cam-operated legs are provided to raise the machine off the floor and level the work for machining and drilling.

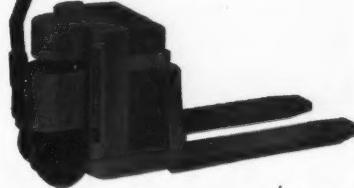
Morley Machinery Corp.

Circle No. 164 on Reader Service Card

**Gives ONE MAN
the strength of FIVE!**



GO-GETTER Pallet Type POWER LIFTRUCK



This walk-along electric truck is compact, powerful . . . gives one man the strength of five. Go-Getter lifts full four inches in only four seconds, drops loads gently and quietly. It rides smoothly on uneven surfaces. Braking is safe and easy. This power-operated dual drive wheel liftruck is strong, maneuverable, stable . . . has 200° turning arc and low center of gravity. Comes in 2-ton and 3-ton models. Send coupon today for Bulletin.

B
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REVOLVATOR CO.

DESIGNERS AND MANUFACTURERS OF
MATERIAL HANDLING EQUIPMENT
SINCE 1904

8739 TONNELE AVENUE,
NORTH BERGEN, N. J.

Without obligation, please send bulletin on
Go-Getter Pallet Type Power Liftrucks.

Name _____

Position _____

Company _____

Address _____

RE-101 Circle No. 78 on Reader Service Card



It's a Hard Worker!

Battery industrial trucks such as this husky are the wheel horses of modern material handling systems. They do their heavy work anywhere from 8 to 24 hours a day...week after week, year after year...with little or no complaint. That's dependability!

The surest way to get full value out of these hard-working, revenue-producing trucks is to equip them with rugged, unfailing batteries...the kind that stay on the job, out of the repair shop. Which is another way of saying, "You'll do a better job cheaper with EDISON Storage Batteries."

Edison cells were designed for hard work. They're built of steel inside and out, and their electrolyte preserves the steel. The steel-sheathed active materials can't shed. Edison batteries can't be injured by accidental short-circuiting or reverse charging...or by standing idle during shutdowns...or even by freezing.

Initially, Edison batteries cost a little more. But when you rate them in terms of years worked, tons handled and down-time saved, you'll agree that they're the best investment you can make. Ask any user!

Write for free booklet SB 2039. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J. In Canada, International Equipment Company, Ltd., Montreal and Toronto.

EDISON

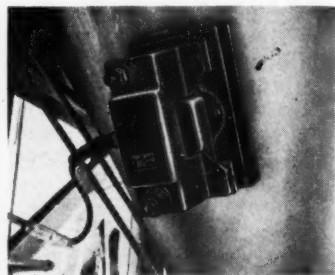


Nickel • Iron • Alkaline
STORAGE BATTERIES

Circle No. 79 on Reader Service Card for more information

82

Semi-noiseless models of its larger size bin, hopper and chute vibrators have been developed by Syntron Company. The new vibra-



tors do the same work as standard models, with a lot less operating noise. Syntron figures they should be useful on interior bins, hoppers and chutes where large groups of operators work. Rubber bumpers instead of metallic parts on the striking units do the trick.

Syntron Co.

Circle No. 165 on Reader Service Card

500 lb. loads are easily lifted, moved and stacked by one man

CUT YOUR SWEEPING COSTS 75%...
WITH **Wilshire**
POWER SWEEPER

Picks up everything from cigarette butts to pop bottles in one easy operation! Write today for dealer nearest you and FREE on-Your-Job DEMONSTRATION.

For dealer nearest you,
Write Dept. B-4

-Sweeping the Country-

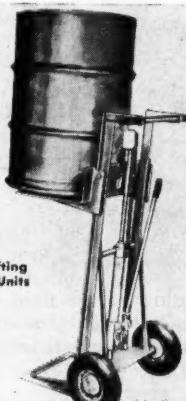
SINCE 1940

Wilshire
POWER SWEEPER CO.
526 W. Chevy Chase Drive
Glendale 4, Calif.



Circle No. 80 on Reader Service Card
APRIL, 1951 • FLOW

using the Shop Caddy sold by Allied Manufacturing & Sales Company. The Caddy is really a hy-

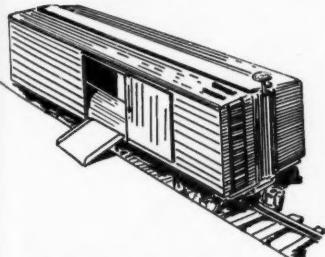


draulic lift built into a standard size hand truck. It lifts barrels, boxes, castings and heavy material of any kind as high as 54 inches. Hydraulic mechanism consists of a lever operated ram, connected to the lift pallet by a chain and sprocket. Each stroke of the lever lifts the pallet about 1 1/4 inch; it takes less than a minute to get the pallet up to full height.

Allied Mfg. & Sales Co.

Circle No. 166 on Reader Service Card

MOFFAT BETHLEHEM PORTABLE BRIDGES



Bridge the gap between your plant and the world.

Economical—Easy to position. Made in all capacities from 2000 lb. to 15000 lb. axle load. Sturdy—safe—steel.

Moffat Bethlehem Portable Bridges are used by some of the largest industrial, transportation and warehouse organizations in the country.

Write for literature and prices. Good delivery.

MOFFAT STEEL COMPANY

1631 E. 4th Street Bethlehem, Penna.

Dealers: Portable bridge business is all over the place. Write us.

Circle No. 81 on Reader Service Card
FLOW • APRIL, 1951

Magliner

standard MAGNESIUM

deck boards

featuring . . . the *NEW* Magliner
fully adjustable
• AUTOMATIC DROP LOCK

"THEY'RE HERE"

Yes—Magliner magnesium dock boards are now available as standard models. The same dock board that is famous for its amazing lightness and bridge-design strength! Stop wasting manpower. Magliner's new low prices bring this money saving equipment within the reach of every firm. Trucks can back to within 3' of loading dock. Boards are reversible to accommodate trucks which are either higher or lower than dock level. Write for Bulletin DB-203 today.

Visit us at...
Booth 227
**MATERIALS HANDLING
EXPOSITION**
April 30—May 4

Magline Inc.
P. O. Box 2346

PINCONNING, MICHIGAN

MANUFACTURERS OF MAGNESIUM Hand Trucks
Bridges • Catwalks • Safety Blocks • Safety Tongs • Can Forks

Circle No. 82 on Reader Service Card for more information

Circle No. 83 on Reader Service Card for more information

RE-NU TOP STEEL-BOUND SKID PLATFORMS



BUILT
TO LAST
A LIFETIME

500 LB. LOAD
UP TO 10 TONS

Designed to fit your loads and equipment. Plain bolted construction for use with hand lift trucks or bolted and welded under frame with armored ends for rough handling by powered trucks. Special purpose skids can be equipped with end racks, shelves, stake pockets, crane hooks, rounded corners and other special features.

SECTIONAL BINS



ROLLAWAY SKIDS



SKID-BOXES



THE LANHAM
COMPANY

1403 S. 12th St., Louisville, Kentucky

5 BIG NEFF & FRY BINS



N & F Bins like these are being used for handling 80-odd kinds of flowable bulk materials. Besides grains, the principal ones are chemicals, chips, clay, coal, gravel, lime, ore, sand, sawdust, seeds, stone.

The distinctive feature of an N & F Bin is the diagonal-ended Super-Concrete Stave formed under 140 tons pressure. It has rocklike density and crushing strength.

It will pay you to get all the facts. Write, wire, or phone us.

THE NEFF & FRY CO. • 110 Elm Street
Camden, Ohio

Circle No. 84 on Reader Service Card for more information

84

Working time is cut by 25%, Market Forge Company says, when you use its new Marforge Lightning Load-Lift. An aluminum single-unit oil tank and pump combination does the trick. Borg-Warner and Market Forge engineers cooperated in the development of the pump, which they call "super-hydraulic." Hydraulic fluid is contained in the unit

above the dual pumps, allowing the fluid to circulate by gravity. The truck is lowered by a simple right-angle flick of the handle—no need to stoop or bend to lower loads. In fact, the operator is saved from any bend at all by the same lifting handle—which raises and lowers the truck.

Market Forge Co.
Circle No. 167 on Reader Service Card for more information

Self-rewinding tape rule goes out 50 feet, comes back when you're ready to pocket it—without cranking or reeling. The full 50 feet come back into the measure's shell in 10 seconds. One hand keeps the unit under control.

Master Rule Mfg. Co., Inc.
Circle No. 168 on Reader Service Card for more information



METZGAR
FLOOR
-TO-
FLOOR
"Power Helper"

More Efficient Than an Elevator—

WRITE —
for Suggestion.

Give height, floor
to floor and hori-
zontal space
available— Also
maximum unit
load.

- Saves on Maintenance
- Costs Less to Operate
- 500% Faster Loading and Unload-
ing Trucks
- Safer to Operate
- More Flexible in Use



METZGAR CO.

423 Douglas N. W.

GRAND RAPIDS 4, MICH.

Circle No. 85 on Reader Service Card for more information

APRIL, 1951 • FLOW

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FLOW

Where there is a steel and concrete foundation yard, where stacks of material are close to railroad tracks or where any other condi-

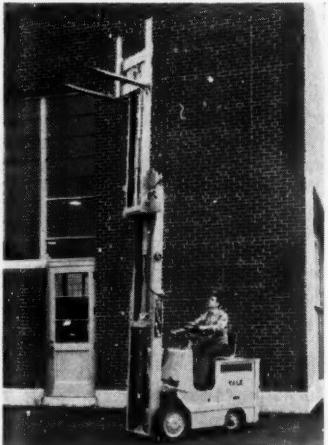


tions make it tough to use fork or straddle trucks for stacking, the crane made by Orton Crane & Shovel Company should come in handy. Orton's crane handles huge load units in spots trucks can't navigate.

Orton Crane & Shovel Co.

Circle No. 169 on Reader Service Card

Design changes that allow standard 88-inch overall height telescopic lift trucks to stack loads as high as 16 feet were announced recently by the Philadelphia Division of the Yale & Towne Manufacturing Company. The new device consists of an extra set of



front channels and an extra lifting cylinder. The channels are hung directly in front of the regular telescopic channels, operated by a separate control. For the normal fork truck work the attachment can be removed in short order.

Yale & Towne Mfg. Co.

Circle No. 170 on Reader Service Card

FLOW • APRIL, 1951

Simply mix the new liquid-based carrier called Adtex with any type of heavy duty floor paint and you get a durable, non-skid floor surfacing. Made by Lowebco, Inc., the product is mixed with equal parts of any oil-based, latex or rubber paint and applied with a brush.

Lowebco, Inc.

Circle No. 171 on Reader Service Card

Cari-All utility trucks are rugged, lightweight vehicles that can

be used for a raft of handling jobs. Made of all steel with a heavy plywood bottom, the trucks have ten-inch wheels with rubber treads. In a new catalog sheet from American Metal Products Company, two models of the Cari-All are shown off: Model CA-4 and Model CA-3. CA-4 is 24" long, 18" wide and 15" deep with a ballbearing swivel caster on its front rest. CA-3 is 5" narrower with a rigid front rest.

American Metal Products Co.

Circle No. 172 on Reader Service Card

HERCULES Hydraulic
Load-N-Gate

The Hercules Load-N-Gate lifts, lowers or holds stationary loads with effortless ease.

PLUS-PROFIT FEATURES

- Safety-tread, non-skid platform
- Exclusive power in both arms handles off-center loads without strain
- Single lever control operated at rear from either side of platform
- Extends only 4 1/2" below chassis frame

Whatever the load—crates, kegs, drums, boxes—you can get it on the truck and off faster, safer and at less cost with a powerful, hydraulically operated Hercules Load-N-Gate. Easily installed on any standard size truck, the Load-N-Gate will pay for itself in a short time in eliminating costly, time-consuming and dangerous loading and unloading by hand. Mail the coupon below now for free literature.



HERCULES STEEL PRODUCTS CORPORATION, GALION, OHIO

NAME _____ TITLE _____

ADDRESS _____

CITY _____ STATE _____

Circle No. 86 on Reader Service Card for more information

BULLETINS • BOOKLETS • CATALOGS

The publications featured on these pages were written by experts. They are FREE publications. To obtain them use the postcard bound into this issue.

Magliner hand trucks are built in accordance with aircraft construction principles, Magline, Inc., says. They have been designed, tested and built to perform any of your regular carting jobs with ease. All Magliner parts are mechanically joined, and all parts are replaceable. A new Magline folder shows five different models of the trucks, gives you complete construction dope and specs.

Circle No. 173 on Reader Service Card for more information

If you have a job for adhesives, Paisley Products, Inc., should be able to help you. Paisley makes more than 15 kinds of carton and case sealing adhesives, 10 bottle label glues and a long list of other adhesives.

Circle No. 174 on Reader Service Card for more information

Lightweight, but plenty rough and tough is the way Belt Corporation describes its Handy-Handler portable conveyor in Belt's latest four page folder. The Handy-Handler is easily positioned and operated by one man; it works efficiently up to a maximum recommended angle of 45°. The folder gives you the whole story.

Circle No. 175 on Reader Service Card for more information

Pressed-on, cured-on and other types of solid industrial tires are shown off in a 27-page booklet released by Monarch Rubber Company. Complete specs for all standard industrial trucks are given.

Circle No. 176 on Reader Service Card for more information

Specially designed for work where handling equipment with low under-clearance is used—and trucks or freight cars are much higher than your dock—the Magcoa ramp-dockboard is described in Magnesium Company of America's latest catalog. The unit is

made in two sections: the ramp and the dockboard. Its important feature, Magcoa says, is its flexibility. The dockboard is used as a separate unit when height difference between dock and carrier is less than the fixed height of ramp. When greater height differences are encountered, the ramp and dockboard are used together.

Circle No. 177 on Reader Service Card for more information

Ratchet, screw and hydraulic jacks are the subjects Buda Company takes up in a new 16 page bulletin. The bulletin illustrates and describes Buda's complete line of jacks in capacities from 3 to 75 tons. A table of contents by jacks models and by industries makes it easy to find the kind of jack you're interested in. Selection tables, recommended uses, application photos and detailed specs are all included.

Circle No. 178 on Reader Service Card for more information

Equipment for closing filled textile and paper bags is Union Special Machine Company's business. Its new bulletin 200 shows the complete line of Union bag closers, sewing heads, columns, tables, conveyors and accessories. If you know your daily packing capacity, you can easily locate the machine you need in the catalog by using special selection tables.

Circle No. 179 on Reader Service Card for more information

Full information on adjustable loading docks is contained in a 2-color bulletin issued by Rowe Methods, Inc. The bulletin shows present models of Adjust-A-Docks along with photos of typical installations. A complete discussion of the docks, their design and construction features is included.

Circle No. 180 on Reader Service Card for more information

Hydramite is the tag American Engineering Company has given its fluid power pump with the "pen-

dulum action." American says it's not just a pump—it's a pressure generator, too. Hydramite gives you superior performance on every type of low or high pressure oil cylinder equipment, according to the booklet American has just published. Photos and drawings tell all about it.

Circle No. 181 on Reader Service Card for more information

A scraper machine consists of a cable-operated bottomless scraper bucket controlled by a drag scraper hoist, driven by an electric motor, gasoline or Diesel engine. The bucket rides on the material it moves. Sauerman Bros., Inc., has published a new 32-page catalog that shows how these scrapers are used to store and reclaim materials in dozens of industries.

Circle No. 182 on Reader Service Card for more information

Nine new 2-color spec sheets on walkie type batteries have been published by Gould-National Batteries, Inc. Each data sheet details the battery to be used with a given make of walkie. And each sheet recommends battery types for light, normal and heavy duty. A spec table on each sheet designates battery type, capacity, dimensions and weight for each manufacturer's truck models. Layouts and tables show the type of terminals, plugs or receptacles supplied to fit specific walkie models.

Circle No. 183 on Reader Service Card for more information



ARGUTO OILLESS conveyor roll bearings

- Operate faultlessly without lubrication under wet or dry conditions.
- Available in any quantity or quick delivery in complete range of sizes for all standard and special rollers.
- Smooth operation on both driving and driven rolls.
- For original installation or quick replacement on present installations.

Write for bulletin 200 today.

20 years



Just one of many applications where it pays to specify Arguto.

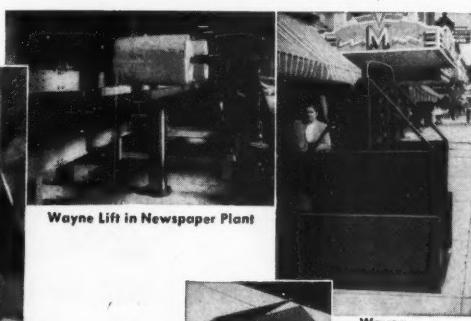
ARGUTO OILLESS BEARING CO.
PHILADELPHIA 44, PENNA.



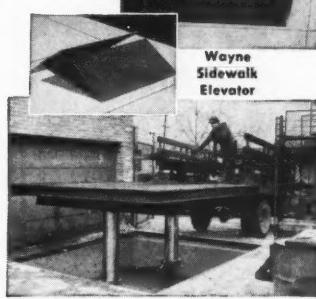
Straight Platform Lift with Full Skirt Electric Pump Operated



Tilting Loading Deck Ramps



Wayne Lift in Newspaper Plant



Wayne Sidewalk Elevator



Straight Platform Lift — 2 Cylinders Platform Lift Air/Oil Operated

Cut Handling Costs

BETTER material handling offers industry its biggest opportunity to cut production costs and to increase productivity. Investigate what it can do for you. Let Wayne engineers help you develop the proper equipment to assure better handling of material in your plant. There's a Wayne Hydraulic Lift for every requirement. Write for more information.

WAYNE INDUSTRIAL HOISTS

AIR COMPRESSORS • HOSE REELS FOR OIL, GREASE, WATER, AIR • BULK PUMPS

MAIL NOW FOR MORE FACTS



THE WAYNE PUMP CO. • FORT WAYNE 2, IND.
516 TECUMSEH STREET

Please send folder and complete information on Wayne Industrial Hoists. Type _____

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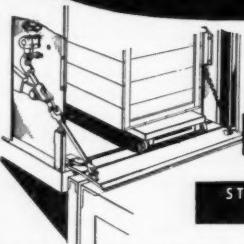
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STATE _____

Circle No. 89 on Reader Service Card for more information

REDUCE OPERATING AND PRODUCTION COSTS WITH

ALEXANDER ELEVATOR SILLS



SPEEDS MATERIAL HANDLING

CUTS TRUCKING HAZARDS

STOPS DAMAGE LOSSES

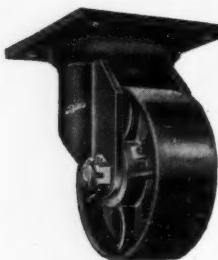
• Eliminate material handling delays, prevent elevator accidents, stop damage losses to merchandise and equipment with Alexander Safety Sills. Unique design permits bridging of wide gap-over door opening from elevator floor to building floor landings. Each sill compensates for differences in floor levels and provides easy, safe and smooth trucking surface.

Write today for catalog F for detailed information.

ALEXANDER SILL COMPANY

manufacturers of patented

SAFETY FREIGHT ELEVATOR TRUCKING SILLS
AUTOMATIC ELEVATOR DOOR TRUCKING SILLS
970-72 N. MILWAUKEE AVE. • CHICAGO 22, ILL.



Series 140-A-MH. Heavy Duty Structural Steel Double Ball Race Swivel Truck Caster with Roller Bearing Semi-Steel Wheels.

new CASTER SERIES new STRENGTH new USES

Bond heavy duty 40-A-MH Series Swivel Casters and their companion Rigid Casters (41-A-MH) are available in a greater range of wheel diameters — 5", 6", 8" and 10". Both series are made of even thicknesses of heavy steel, uniformly shaped for extra strength and rigidity.

Write today for full information on the Bond 40-A-MH and 41-A-MH Heavy Duty Casters. Ask, too, for your copy of the Bond Catalog K-38.

BOND FOUNDRY & MACHINE CO.
MANHEIM, PENNA.

Circle No. 90 on Reader Service Card for more information

The complete Styl-O-Matic line of unscrambling tables, accumulating tables, lateral curve conveyors and bottle, jar, can and container conveyors is illustrated in a 24-page booklet published by Island Equipment Corporation. Photos and charts give you the complete specs on all equipment. Application photos show how other plants have used the equipment.

Circle No. 184 on Reader Service Card for more information

A new standard in electric hoists is the way Manning, Maxwell & Moore, Inc., describes its Series 700 Load Lifter. The manufacturer's Bulletin 399 tells all about the new hoist, shows how it is easily service right in place, gives complete specs, sizes and catalog numbers.

Circle No. 185 on Reader Service Card for more information

Design and application of the Hystaway excavator crane and the Hyster grid roller is the subject of new catalogs released by Hyster Company. The 16-page Hystaway catalog is illustrated with operational photos of the five-in-one machine, described as both a utility and production tool. The six-page grid roller booklet introduces Hyster's newest piece of equipment and shows it at work.

Circle No. 186 on Reader Service Card for more information

REALLY RUGGED

Gripper Woven Wire Slings lift any load faster, easier . . . with greater safety!

Gripper woven wire slings provide really rugged strength for any lifting job because of their unique type of construction. They're not a wire rope or chain link. Gripper slings are constructed by a series of tough spiral wires, joined together across the flat body of the sling.

Thus, they provide a wider bearing surface, smaller bend radius, greater gripping power. And they are easier to handle, give freedom from kinking and tangling.

There's no danger of sudden breaks! If one wire does break it is immediately visible, but you can continue to use the sling even after several wires are broken.

SEE YOUR DISTRIBUTOR TODAY for full details or write direct for technical data folder. Cambridge Gripper slings are sold through industrial supply, safety equipment and materials handling distributors.

Bond
built-for-the-job
40-A-MH and
41-A-MH Series
Heavy Duty
STRUCTURAL
STEEL CASTERS



Series 141-A-MH. Heavy Duty Structural Steel Rigid Caster with Roller Bearing Semi-Steel Wheels. Companion caster to the 140-A-MH Swivel Caster.



The Cambridge Wire Cloth Co.

WIRE CLOTH METAL CONVEYOR BELTS SPECIAL METAL FABRICATIONS

Department W
Cambridge 4, Md.

DISTRIBUTORS—VALUABLE TERRITORIES STILL OPEN. ASK FOR DETAILS.

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APRIL, 1951 • FLOW

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Selection of ball bearing types and sizes for various conditions of load and speed has been simplified and illustrated in New Departure Division's 20th Edition of its ball bearing catalog. Load rating tables now give both radial and thrust capacities for all bearings except those designed for certain specialized services; speeds have been arranged to include those for synchronous motors.

Circle No. 187 on Reader Service Card for more information

If the transportation of small containers, bottles, packages or parts through such operations as washing, bottling, packing, capping or labeling is part of your job, you'll want to see a new catalog from Link-Belt Company. Flat-top conveyor chain is the subject of the catalog. Link-Belts gives dimensions and pertinent data on the chain.

Circle No. 188 on Reader Service Card for more information

Interested in giving your product greater shipping safety in a better looking package? Kimberly-Clark Corporation might be able to help you. Its latest catalog shows how dozens of other people have done it, gives you some sound arguments for using Kimpak for your interior packaging. Plenty of photos and brisk copy make the booklet easy to take.

Circle No. 189 on Reader Service Card for more information

**WEIGH MATERIALS ON THE SPOT
SAVE UP TO 22% ON LABOR COSTS**

Compact
Low-Cost

DILLON

Weight Indicator

Picking materials up, moving them to a scale, setting them down and then picking them up again means double handling and greatly increased operational costs. With the DILLON Weight Indicator, loads are checked on the spot the instant they are lifted. Accuracy is guaranteed to be within ONE division or less at any point on the dial. Adjustable for large tare loads. 16" dia. dial. Swivel hook. Accidental overload and shock protected. 8 capacities from 0-250 pounds up to 0-20,000 pounds. Portable — weather-proof — dust-proof. Each unit checked with certified dead weights. Extreme utility at LOW cost!

Write today for illustrated, descriptive literature

W. C. DILLON & CO., INC.

1421-Q South Circle Avenue • Forest Park, Illinois
Circle No. 92 on Reader Service Card for more information
FLOW • APRIL, 1951

Circle No. 93 on Reader Service Card for more information

Save time! Prevent accidents!

UP AND DUMP
MECHANICALLY

**BAGS
BARRELS
DRUMS
BOXES**

REDUCE HANDLING COSTS with a Cesco Dumper. It handles up to 100 loads per hour; has a lifting cap. ranging from 100 to 1500 lbs. Both single- and multi-purpose portable models are built in standard dumping heights from 5 to 12 ft. Stationary models up to 16 ft. dumping heights. Push button controlled. Write for catalog.

COLSON EQUIPMENT & SUPPLY CO.
1317 Willow Street • Los Angeles 13, California

CESCO DUMPER
Handles
BAGS
BULK
DRUMS
WRITE FOR CATALOG
DUMPS ANY FREE FLOWING MATERIAL
CESCO SKIP HOIST DUMPER

ELECTROLIFT



**the ONE hoist
with ALL
the advantages**

You can save power, labor and time with a new ElectroLift worm drive hoist. One man handles up to 6 tons . . . smoothly, quietly, quickly, safely and economically. Push-button operation gives perfect control.

Choose from a wide range of models for any plant purpose. Call your ElectroLift representative listed in the classified telephone directory. Or write to:

**WORM DRIVE
ELECTROLIFT
HOISTS**

ELECTROLIFT, INC., 30 Church Street, New York 7, N. Y.
Circle No. 94 on Reader Service Card for more information

An easy-to-read new 12-page bulletin describing the basic operating principles of the Reeves variable speed drives has been published by Reeves Pulley Company. Containing rating tables and dimension drawings, the bulletin shows equipment ranging from $\frac{1}{4}$ to 87 hp with stepless speed changes within ratios from 2:1 to 16:1.

Circle No. 190 on Reader Service Card

Means for increasing the efficiency of railroad switching operations are incorporated in a new

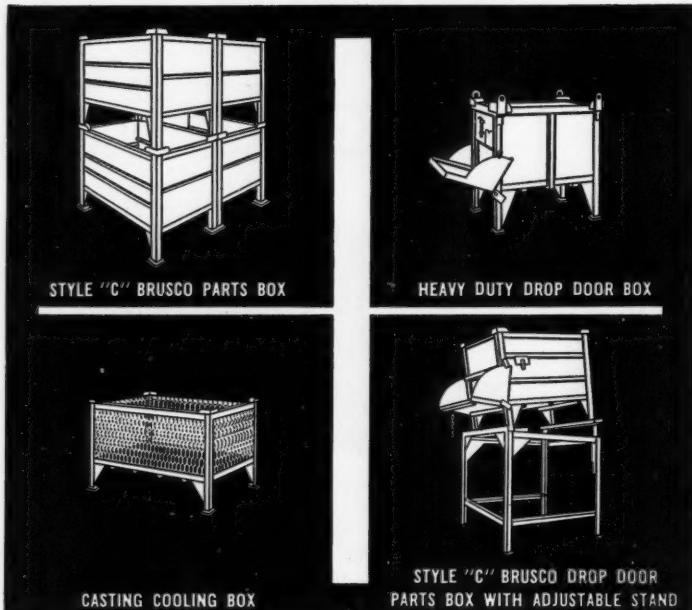
Chart Analyzer offered by Barco Manufacturing Company, for use in conjunction with Barco Switch Engine Operation Recorders. Bulletin 998 from Barco shows how the Chart Analyzer works, with an actual record of a switch engine operation covering a workday period.

Circle No. 191 on Reader Service Card

Designed to be used as a training aid on safe, orderly coal handling methods, an 8-page booklet published by Allis-Chalmers answers a raft of questions on coal storage

IS YOUR PLANT HANDLING PRODUCTION PARTS WITH PEAK EFFICIENCY?

Let **BRUSCO** show you how to hang on to parts handling dollars that you may be losing.



1. **BRUSCO** saves all kinds of valuable space when it comes to handling and storage. Units are easily stacked or tiered to make full use of vertical space, leaving more floor space for production work and machinery.
2. **BRUSCO** is engineered to work with every method of material handling.
3. **BRUSCO** is all steel, welded for strength and rigidity and fabricated with the correct gauge to meet your handling requirements.

Show above are a few standard items of the **BRUSCO** Material Handling Line. These and many other units of **BRUSCO** equipment can be built to fit your particular handling conditions. Write for full information. If you have a handling problem, let **BRUSCO** beat it.

BRUMMELER STEEL PRODUCTS CORPORATION

1410 Ionia Ave. S. W.,

Grand Rapids, Michigan

Circle No. 95 on Reader Service Card for more information

problems. How to store coal without running the risk of fire and oxidation takes up one big section of the booklet.

Circle No. 192 on Reader Service Card

The six page folder released by The Bellows Company illustrates and describes the Bellows Electroaire Valve—a complete packaged air control unit. The unit consists of four-way directional valve, solenoid controls, and independent speed regulators for control of piston rod speed of air cylinders in either or both directions. Detailed technical data and wiring diagrams are shown in the bulletin.

Circle No. 193 on Reader Service Card

Engineering info for proper application of its RC roller chain flexible shaft couplings is contained in a 4-page illustrated folder just published by Link-Belt Company. Dimensions, weights, service factors and horsepower ratings are all given in the booklet. Detailed data on two types of protective grease-retaining casings are also given.

Circle No. 194 on Reader Service Card

Twenty-four pages of charts and photographs have been put into the latest Euclid Crane & Hoist Company catalog of cranes. Typical Euclid cranes, hand racked cranes and outdoor cranes make up an interesting photo section of the booklet. Capacities and dimensions of standard models are given.

Circle No. 195 on Reader Service Card

Labor-saving applications of hydraulic pullers and jacks are discussed in a new 8-page bulletin issued by Templeton, Kenly and Company. The bulletin also introduces Simplex Re-Mo-Trol Hydraulic pumps and remote-controlled rams. It shows how these units simplify rigging requirements and improve safety in different rigging, pushing and lifting jobs. Complete specs of Re-Mo-Trol and other equipments are given.

Circle No. 196 on Reader Service Card

(Turn to page 94)

Electrified Materials Handling Equipment For Greater Production

C. B. Elledge, Industrial Divisions
General Electric Co., Schenectady, New York

For the third time in your life and mine we are approaching a period in the history of our country when its strength will be measured in terms of productive capacity. In fact the ability to produce may be the means for the survival of democracy in America.

Men properly equipped to handle the materials of industry, are free from many occupational hazards and sustain fewer injuries than men who depend on human muscles. The National Safety Council reports that 25% of all industrial accidents are caused from manual handling of materials, most of these being hernia and back injuries from lifting. Every man away from work because of injury means lost production. Industrial accidents can be minimized and thousands of man-hours can be saved by the installation of adequate materials handling facilities. Whether measured in terms of man hours or dollars, human muscle is the most costly way known to handle materials.

With the shortage of manpower looming so ominous on the horizon; with men leaving industry each day for the armed services, it is evident that greater mechanization of industry is essential if we are to keep America strong. The possibilities for increasing the productivity of our labor force by electrified materials handling equipment is not idle conversation. Let us examine a few cases that illustrate how man-hours have been saved and how less enlightened industries can make the same savings.

Conveyors

One of the most common place tools of the materials handling engineer is the conveyor. Where a steady continuous movement over a fixed route is involved the conveyor is very often specified. The portable package conveyor, sometimes called a 'stacking conveyor,' is perhaps the most simple of all and greatly facilitates stacking and

simple handling of operations. For other jobs a continuous belt or slat conveyor is indicated. On the production line conveyor, parts being assembled are automatically moved from one station to another completely eliminating men for movement of material. A more unique

conveyor is one which literally bends its flexible back, if you please, to carry bags right into the side of a box car. As the car fills up, the operator pushes a button to operate a small shuttle motor to retreat the conveyor slightly towards the door. This conveyor may be fitted to any

INDUSTRIAL TRUCKS
... how to tell when they are

Busy?
Idle?
Lifting?
Engine Running?
etc.

PUT ON Servis Recorders!
A couple of screws or bolts does the job. Then the truck itself *writes its own story!*

Standing
Traveling, etc.

THE CHART
Wax covered,
no ink or pencil needed;
a sapphire
stylus marks
the record—a
picture of the
day's work at a glance.

SERVIS RECORDER—closed.
Just bolted on—no connection with any moving part.

LET US SHOW YOU
how Buick, Thompson
Products, and others
are getting big results with
Servis Recorders.

THE SERVICE RECORDER CO.
1375 Euclid Avenue • Cleveland 13, Ohio

The Servis Recorder
Keeps Trucks Busy

Circle No. 96 on Reader Service Card for more information

conveyor system bringing bags to the side of the car thus providing a continuous movement from the loading point right into the box car for shipment.

A special and unique adaptation of this conveyor particularly useful in handling bags of fluffy material, provides a flattening operation substantially increasing the number of bags that may be loaded to a single car. Load in a single car has been increased by as many

as two hundred bags or 33% thereby releasing one car in four for other important work. When freight cars are in great demand this saving in transportation facilities is vital to our national strength. With this novel conveyor men can load 800 bags flattened in a car.

Coal Handling

In our public utility power industry, think what would happen

to our present extremely low power rate, if you had to go back to a system of using an army of men pushing wheelbarrows to bring the coal into the plant and then shovel the coal into the boilers. Your plants now have a very efficient coal handling system utilizing conveyors under the railroad track hoppers and bucket elevators and belt conveyors to carry the coal to overhead bunkers. From whence the coal is conveyed to automatic stokers or pulverizers.

One hundred percent materials handling operations are encountered in receiving warehousing and shipping of materials of industry. Where the work to be performed consists entirely of moving and storing of goods, these operations present a most fertile field for saving manpower and releasing men for other work, through the use of modern materials handling equipment. Moreover available facilities may be used more efficiently where modern materials handling equipment is employed.

A hand stacked warehouse can very quickly become a confusion of bags, crates, cartons and other miscellaneous containers involving such confusion that the warehouse space is not utilized to good advantage nor is it possible to efficiently move materials in and out of the warehouse area. Cranes and hoists may be used to good advantage in permitting vertical storage of materials thereby materially increasing the warehouse capacity. One large warehouse owned by the U. S. Government was successively operated by several tenants at a substantial loss. Finally one enterprising tenant doubled the capacity of a warehouse by installing up-to-date cranes to permit vertical storage.

One of the most versatile tools available to the materials handling engineer is the industrial truck used where horizontal transportation over undefined routes is involved and where an assortment of material is to be handled. Contrast the work that can be performed by a finger tip controlled truck with men tugging at boxes.

4TH NATIONAL MATERIALS HANDLING EXPOSITION

The largest, most comprehensive array of materials handling equipment and machines ever brought together in one place and at one time. More than 200 leading companies will show the materials handling tools that can work miracles of cost reduction, increased productivity, heightened operating efficiency. See the brilliant new added feature — two outdoor acres of yard handling equipment.

The country's top authorities will describe newest refinements in materials handling equipment and techniques at technical sessions concurrent with the show.

For information, concerning the exposition, address
Clapp & Polak Inc., Exposition Management, 341 Madison Ave., N. Y.

APRIL 30 - MAY 4

INTERNATIONAL AMPHITHEATRE CHICAGO



Sponsored by Material Handling Institute
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The industrial fork truck is available with many specialized attachments for handling unusual loads but the most commonplace attachment employs a simple platform or fork for handling unit loads. A unit load has been defined as "A quantity of material assembled and sufficiently secured together to permit handling and packing by means of power equipment, for loading, shipping, and unloading as a unit." Every time a truck is employed to do a job manpower is released for other productive work. Where many small irregular objects were handled one at a time and the operation has been replaced by a unit load system with power trucks the results have been spectacular.

Unit Loading

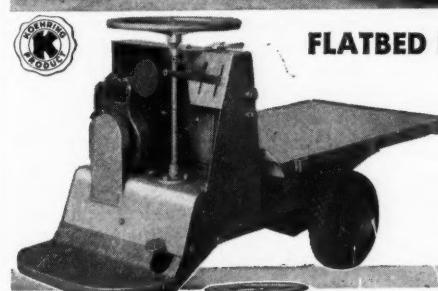
An automobile manufacturer discontinued hand-loading of springs and shifted to unit loading reducing the loading time to 92%. Lead pigs have been strapped together to form unit loads and handled as such in place of separate handling of each pig piled loose in a railroad car. Where they can be used to best advantage, conveyors, trucks and cranes should be combined for the most efficient and effective materials handling system.

And so it goes these examples are some of the common place tools for materials handling in industry. There are many others, however, doing the back breaking jobs of industry, speeding production and filling needs that could not be done in any other way. A review of materials handling methods would not be complete without considering some of the larger, more spectacular, specialized materials handling equipment such as ore bridges, car dumpers and cranes. Even electrically powered shovels removing overburden from coal and loading it into haulage facilities perform a materials handling job for industry. These machines produce approximately 25% of the nations' coal supply, releasing for other work two out of every three men that would be required if mined by underground methods.

LABOR-SAVING Moto-Bug

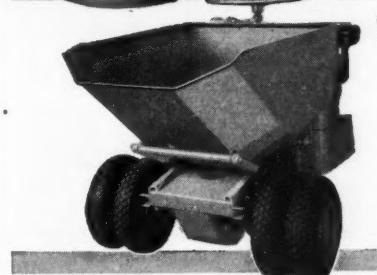
has adjustable FORK LIFT

With 4 interchangeable units, Kwik-Mix Moto-Bug makes man-hours more productive on all kinds of material-handling jobs. Fork Lift, hydraulic pump operated, transports pallets and crates . . . has adjustable-width forks.



FLATBED PLATFORM

carries 1200-lb. load on sturdy 32" x 4 ft. bed. Platform tilts for easy pull-away when unloading . . . has stake pockets for adding sideboards. With full power forward and reverse, there's "no push, no pull" necessary to travel, back up, or spot.



10 CU. FT. HOPPER

hauls coke, scrap, concrete and other bulk materials. Standard-make 4 h.p. gas engine takes full load up 20% ramps, grades. Operator rides on rear step. Plenty of traction and flotation . . . dual steer wheels standard, dual drive wheels optional.



SCRAPER BLADE

for plowing snow, spreading cinders, etc., sets at any angle, is supported by swivel shoe at each end. Hand lever lifts blade for travel clearance. Not necessary to remove hopper. Get more Moto-Bug facts from Kwik-Mix distributor . . . or write.

Mail Now to: KWIK-MIX COMPANY, Port Washington, Wis.

Send full information on Moto-Bug with: Fork Lift 1200-lb. Flatbed 10 cu. ft. Hopper Scraper Blade

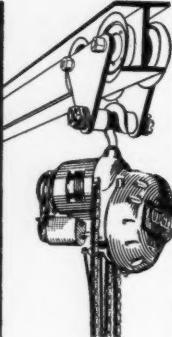
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COMPANY _____
STREET _____
CITY _____
TITLE _____
DEPT. OR DIV. _____
STATE _____

KM137BW

KWIK-MIX Moto-Bug



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"MINUTE MEN" FOR YOU!

'Budgit' Electric Hoists go a long way in winning the battle of production in war and peace. They take over tough lifting jobs completely, so women and older men find it easy to lift heavy machine parts on production, assembly, and inspection lines.

From production to assembly, inspection, and shipping 'Budgit' Hoists eliminate fatigue, lame backs, torn ligaments, sprained muscles. Thus workmen's compensation costs stay low. 'Budgit' Hoists are safe to use. Throughout industry, you'll find thousands and thousands of 'Budgits' hard at work. They're complete lifting units — come ready to hang up, plug in and use. No extras to buy. No installation costs. You get fast, efficient hoisting for only a few cents a day.

There are key areas in your plant where 'Budgit' Electric Hoists can save time and money. Capacities range from 250 to 4,000 lbs. Bulletin No. 391 contains full information. Write for a copy.

**'BUDGIT' TROLLEYS
MAKE ANY HOIST
MORE USEFUL**
They're easy-running ball bearing trolleys, made of tough steel. Quickly adjustable to fit numerous I-beam sizes. Smooth operating on curves. Mass produced to high-quality standards. Capacities: 500 to 4,000 lbs. Prices start at \$13.50. Write for Bulletin No. 390.



'BUDGIT' Hoists

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" Industrial and "Microsen" Electrical Instruments.

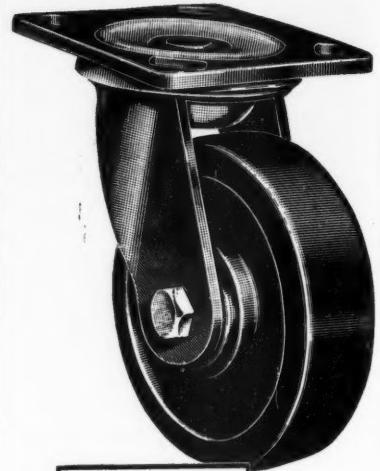
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94

Free Literature . . .

(Continued from page 90)

A catalog page, available from Jacob House & Sons, contains details on its Upover dumping machine for liquids and dry materials. It is designed to dump bags of free-flowing substances and 10-15-gallon cans of liquid material from the stainless steel skip. To operate: container is placed on platform and the top and spout set in place. The load is locked and as the platform is raised and tilted the contents flow into the receptacle. Various sizes are available.

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Coburn overhead monorail can be arranged to run directly over the machines it serves, leaving valuable floor space clear for trucking. Made in seven sizes, the track covers a wide range of load capacities described in Coburn's latest catalog. The track is designed for use with manually propelled carriers, which may be equipped with either chain hoists or electric hoists. The catalog also illustrates the standard parts available for Coburn track.

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Problems of loading and unloading, moving and handling large quantities of metal in a hurry might be solved by a lifting magnet in your plant. An eight page folder from the Stearns Magnetic Manufacturing Company shows its lifting magnets on the job in a raft of different applications, speeding up scrap and production handling. Sizes and operating data are included in the booklet.

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Three used pallet electric moto-trucks. The Goyer Company, Greenville, Mississippi.

4 Yale K22 high-lift platform trucks; 15 Economy elevator lifts, used but in good condition. C. B. Lathrop, 2910 N. Boulevard, Richmond, Virginia. Phone 4-6735.

Browning 10-ton cab controlled traveling crane. Span 38 feet 10 $\frac{1}{4}$ inches. Speeds: hoist, 25 fpm; trolley, 125 fpm; bridge, 200 fpm. This crane is now in operation and is in excellent operating condition. Knox Corporation, Thompson, Georgia.

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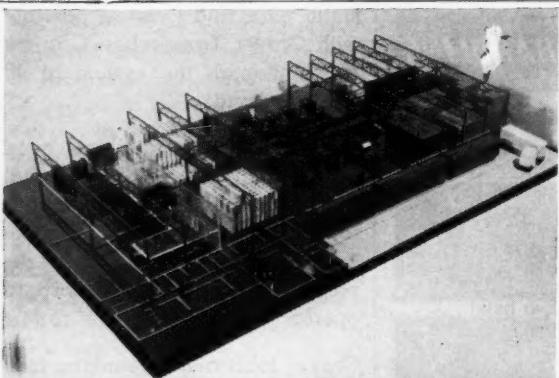
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ADVERTISERS' INDEX

ABC Packaging Machine Corp.	64	Robert Gair Co.	65	Neff & Fry Co.	84
Acme Steel Co.	19	General Box Co.	54	Nolan Co.	70
Albion Industries	81	General Electric Co.	34-35	Nutting Truck & Caster Co.	78
Alexander Sill Co.	88	B. F. Goodrich Co.	17		
Allis-Chalmers Mfg. Co.	13	Goodyear Tire & Rubber Co.	7	Samuel Olson Mfg. Co., Inc.	73
American Monorail Co.	12	Grover Co.	95	Orangeville Mfg. Co.	80
Avey Conveyor Mfg. Co.	10				
American Metal Products Co.	76	Geo. Haiss Mfg. Co., Inc.	53	Paisley Products, Inc.	65
Arguto Oilless Bearing Co.	87	Harnischfeger Corp.	Cover II	Palmer-Shile Co.	27
Arkansas Pallet Co.	74	Hercules Steel Products	85	Pittsburgh Steel Products Co.	9
Automatic Transportation Co.	1	Hoosier Fence Co.	72		
		Hydroway Scales, Inc.	72	Rapids-Standard Co.	94
Baker-Raulang Co.	49			Ready-Power Co.	28
Barrett-Cravens Co.	29	Industrial Marking Equipment Co.	67	Revolver Co.	81
Basick Co.	37	Ironbound Box & Lbr. Co.	73	Ross Carrier Co.	14
Baughman Mfg. Co.	70	Island Equipment Corp.	73	Rotary Lift Co.	74
Belt Corp.	64	Jacob Industries Sales Corp.	59	Roycraft Models, Inc.	96
Bond Foundry & Machine Co.	88	Kimberly-Clark Corp.	61		
Brummeler Steel Products Corp.	90	Kwik-Mix Co.	93	Sauer Bros., Inc.	78
Buda Co.	21	Lamson Corp.	36	Schield Bantam Co.	51
E. W. Buschman Co.	8	Lanham Co.	84	Service Caster & Truck Corp.	11
C & D Batteries, Inc.	38	Thos. Laughlin Co.	77	Service Recorder Co.	91
Cambridge Wire Cloth Co.	88	Lewis-Shepard Products, Inc.	Cover III	Shepard Niles Crane & Hoist Co.	24
Central Fibre Products Co.	67	Lyon-Raymond Corp.	16	Signode Steel Strapping Co.	62
Clapp & Poliak, Inc.	92	Magline, Inc.	83	The Stanley Works	31
Clark Equipment Co.	26	Magnesium Co. of America	79	Towmotor Corp.	47
Colson Equipment & Supply Co.	89	Manning, Maxwell & Moore, Inc.	94	Transit Truck Co.	22
Cullen-Friestdorff Co.	80	Mansaver Industries, Inc.	79		
		Marsh Stencil Machine Co.	66	U. S. Rubber Co.	50
W. C. Dillon & Co., Inc.	89	Mercury Mfg. Co.	52	Union Special Machine Co.	67
Dodge Mfg. Co.	15	Merrill Brothers	95	Union Steel Products Co.	20
Thos. A. Edison, Inc.	82	Metzgar Co.	84	Wayne Pump Co.	87
Electro Lift, Inc.	89	Minnesota Mining & Mfg. Co.	63	Jervis B. Webb Co.	23
Elwell-Parker Electric Co.	5	Mobilift Corp.	6	Westinghouse Electric Corp.	4-25
Equipment Mfg., Inc.	71	Moffat Steel Co.	83	Williford Mfg. Co.	71
Euclid Crane & Hoist Co.	74	Moto-Truc Co.	75	Wilsford Power Sweeper Co.	82
Fairbanks Co.	30			Wisconsin Motor Corp.	51
Flexible Steel Lacing Co.	96			Yale & Towne Mfg. Co.	2
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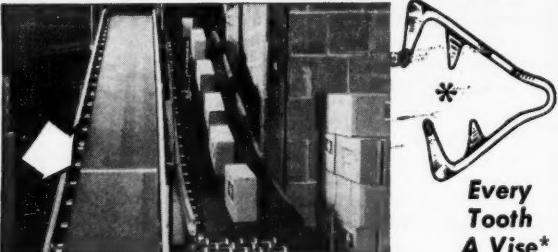
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78

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65

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9

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28

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14

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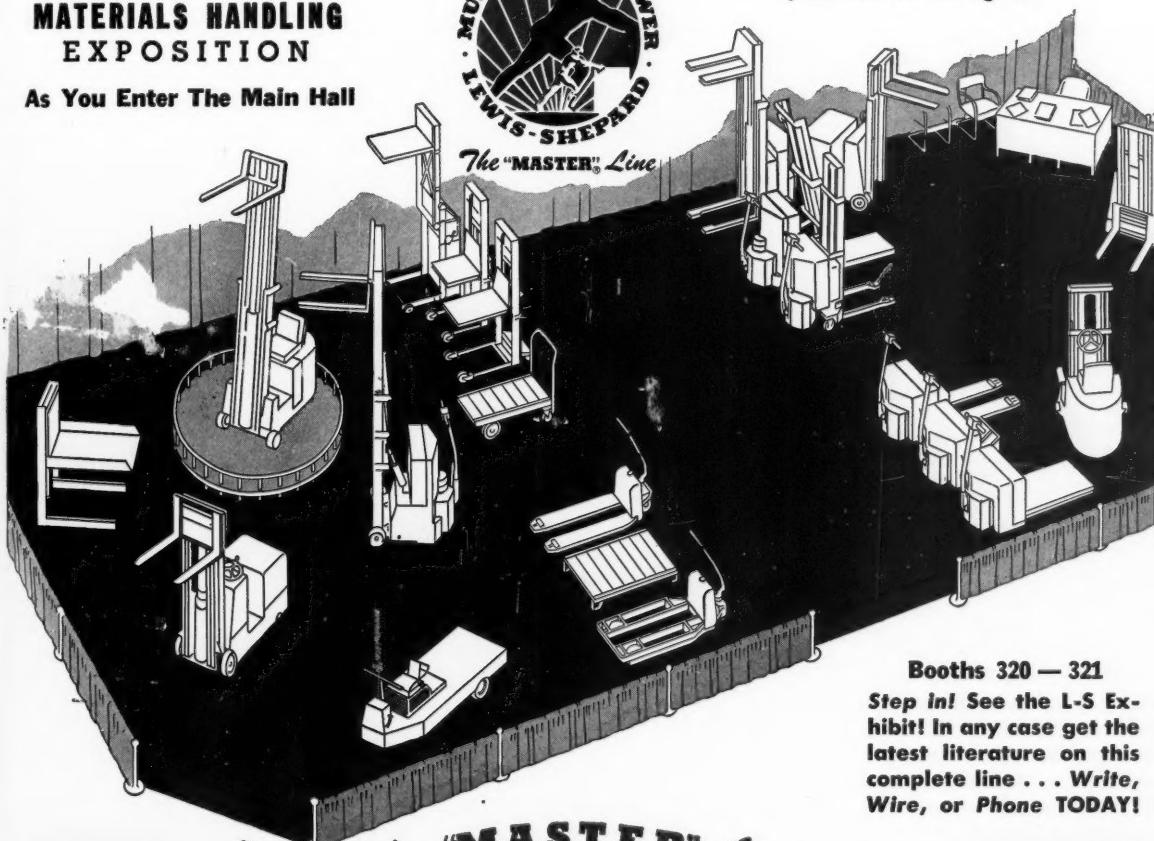
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how much



costing your business?

★ *Production Static* can be compared to radio static. Radio static interferes with your program reception . . . "Production Static" interferes with your profits!

"Production Static" represents the loss of time in your plant while materials are waiting to be moved, while machines are idle, while products or parts are being lifted, or loaded, or stored by "hand."

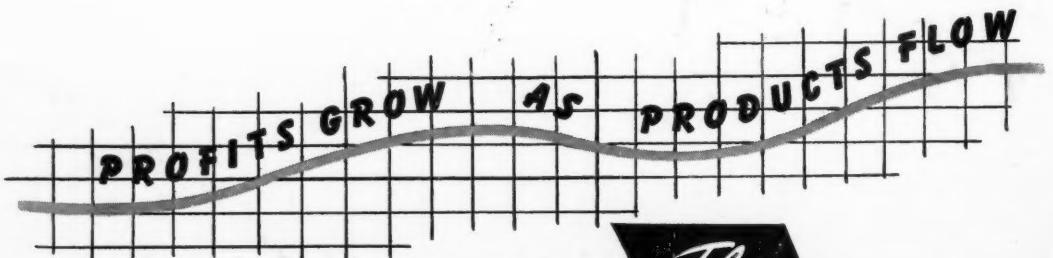
"Production Static" is the kind of "standing around" that defeats the best cost-cutting methods you can devise, and robs you of production. You do not allow your men to "stand around"—then why let your materials do this? *Lost motion is lost money!*

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